VOLUME LVIII NUMBER SIX

The NATIONAL GEOGRAPHIC MAGAZINE

DECEMBER, 1930

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IMMEDIATELY after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resulting given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

AT an expense of over $50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their discoveries form a large share of our knowledge of a civilization waning when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole, and contributed $55,000 to Admiral Byrd's Antarctic Expedition.

NOT long ago The Society granted $25,000, and in addition $75,000 was given by individual members to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people.

THE Society's notable expeditions to New Mexico have pushed back the historic horizons of the Southwestern United States to a period nearly eight centuries before Columbus crossed the Atlantic. By dating the ruins of the vast communal dwellings in that region The Society's researches have solved secrets that have puzzled historians for three hundred years. The Society is sponsoring an ornithological survey of Venezuela.

TO further the study of solar radiation in relation to long range weather forecastings, The Society has appropriated $65,000 to enable the Smithsonian Institution to establish a station for six years on Mt. Brukkaros, in South West Africa.

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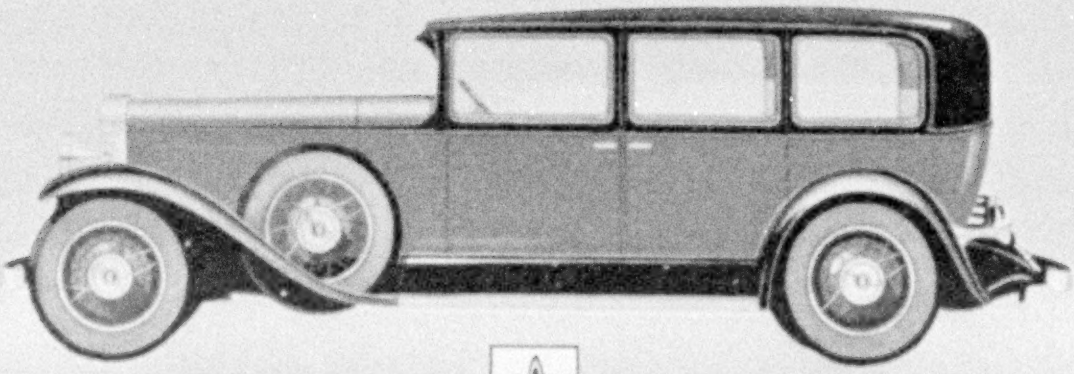

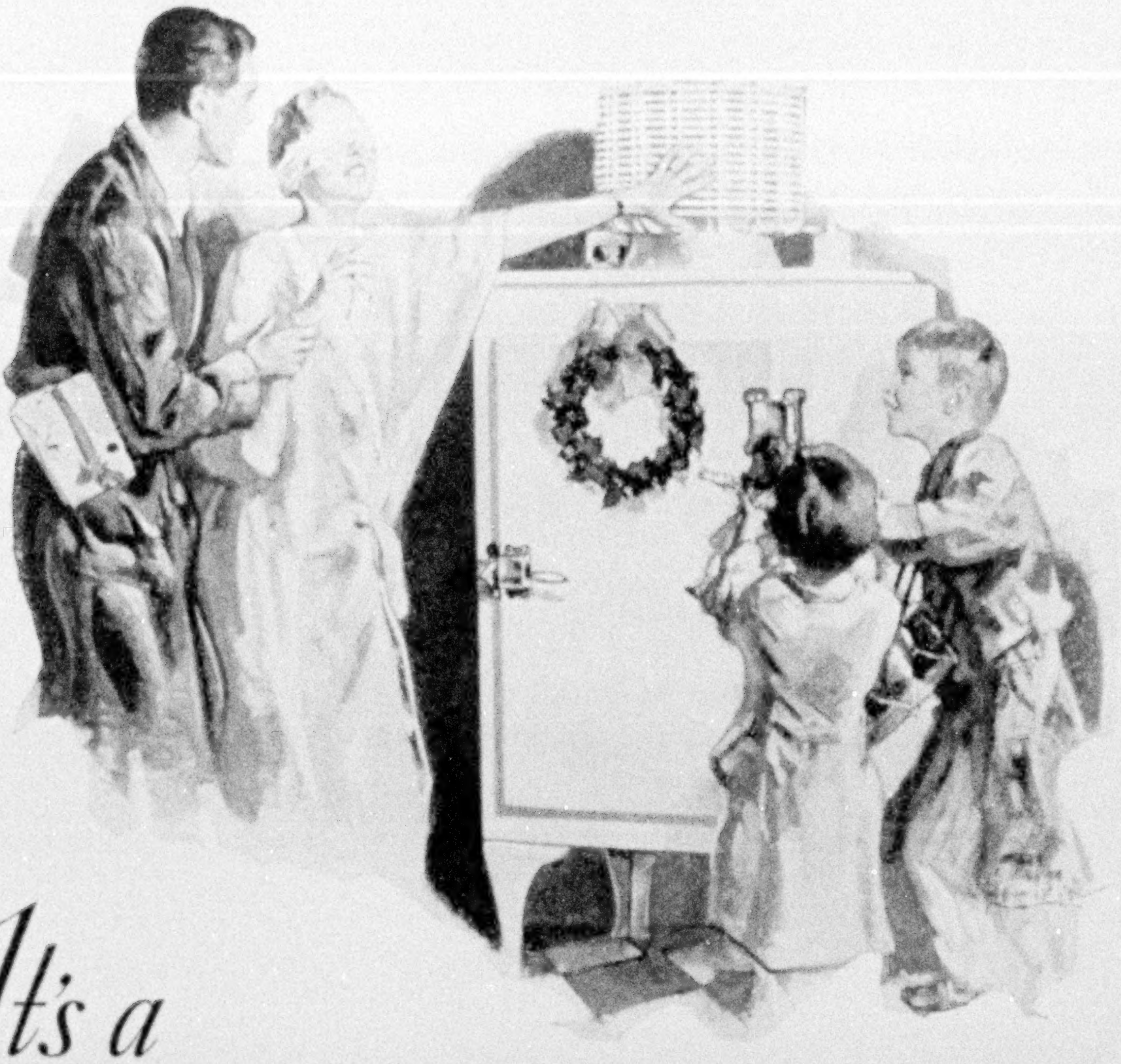

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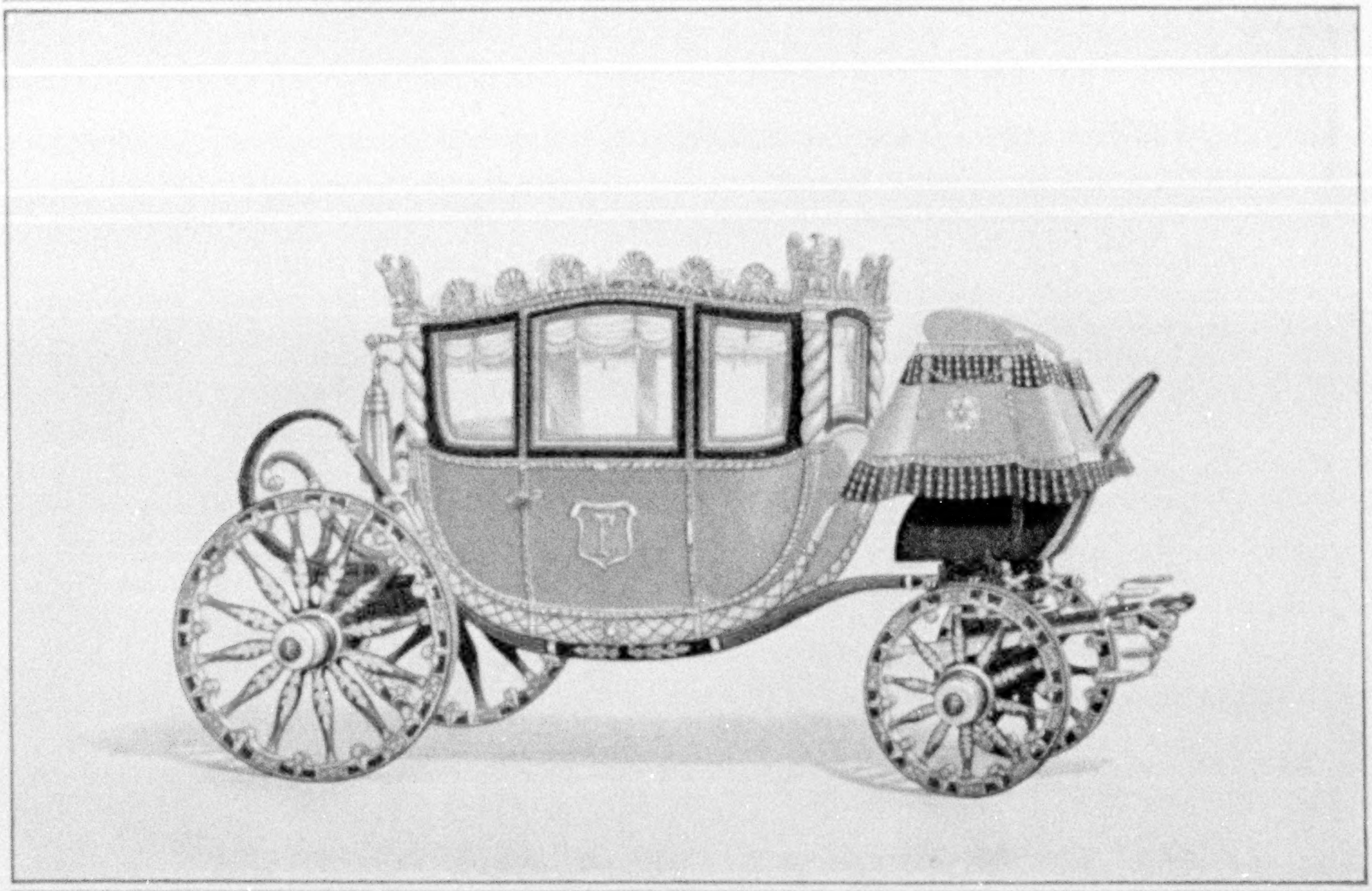

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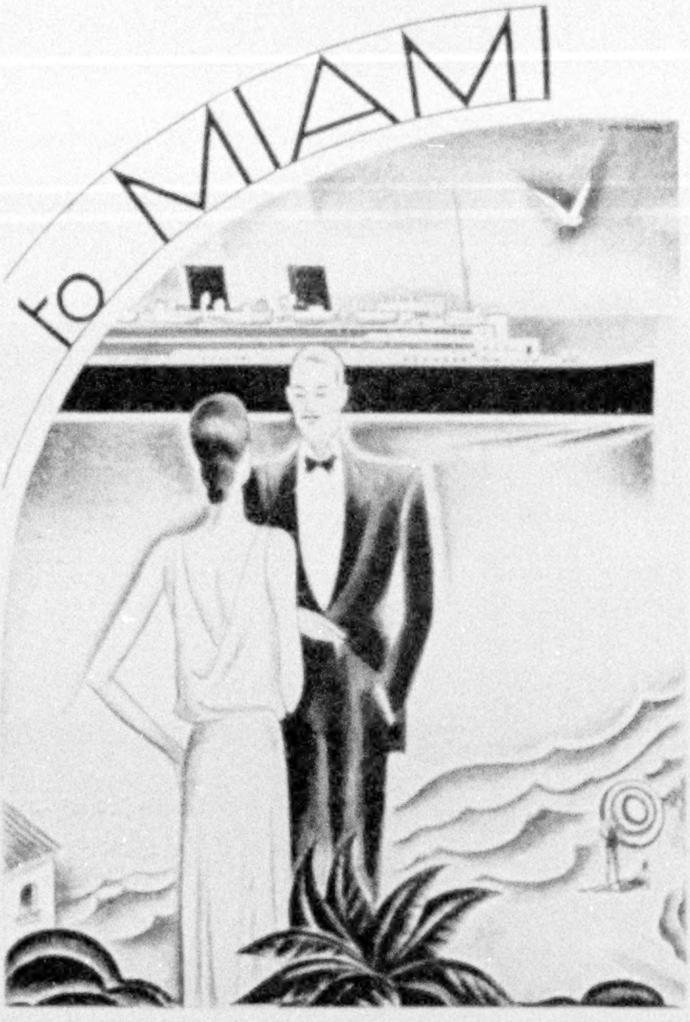

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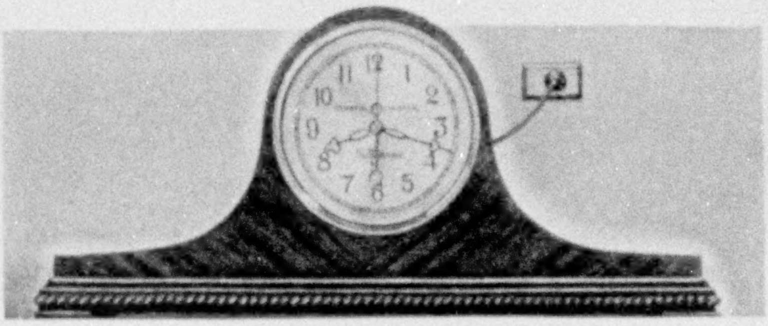

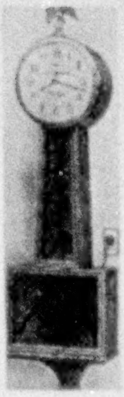

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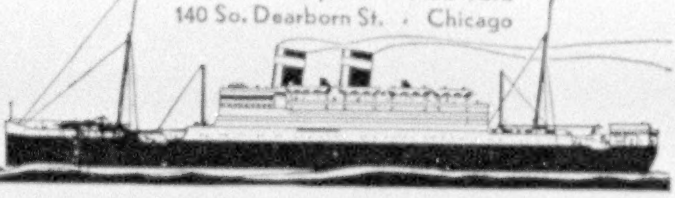

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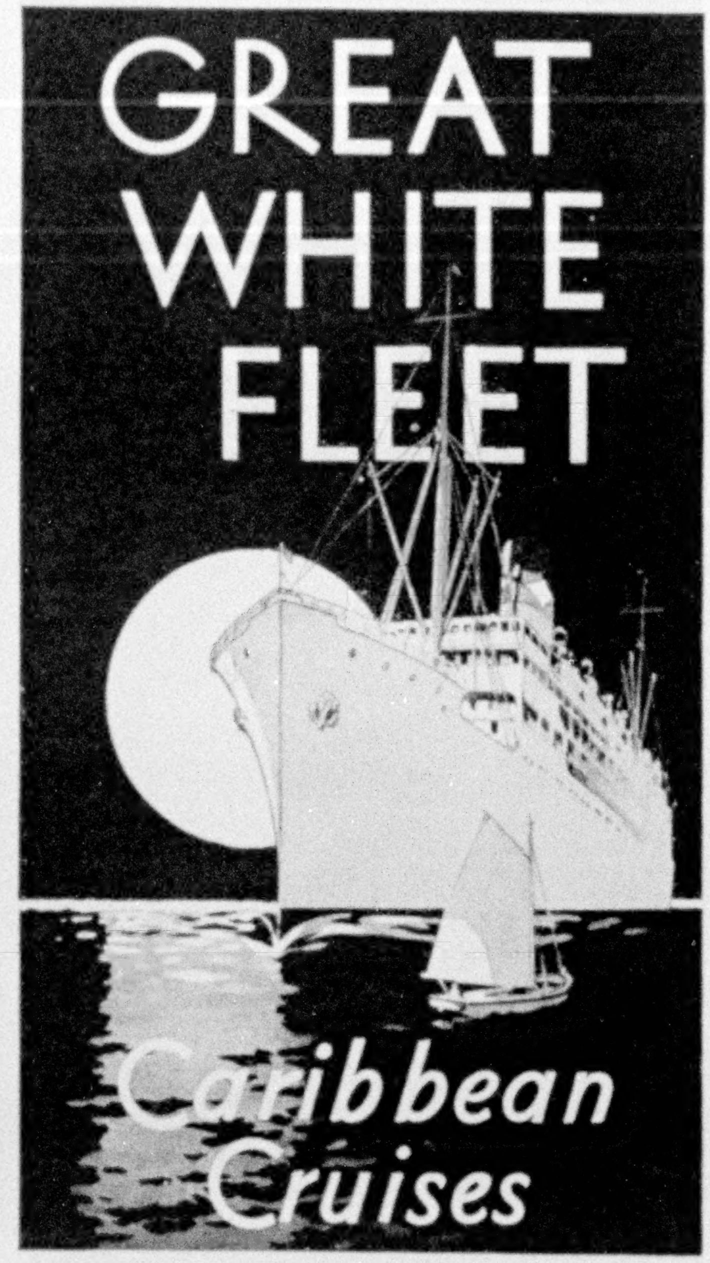

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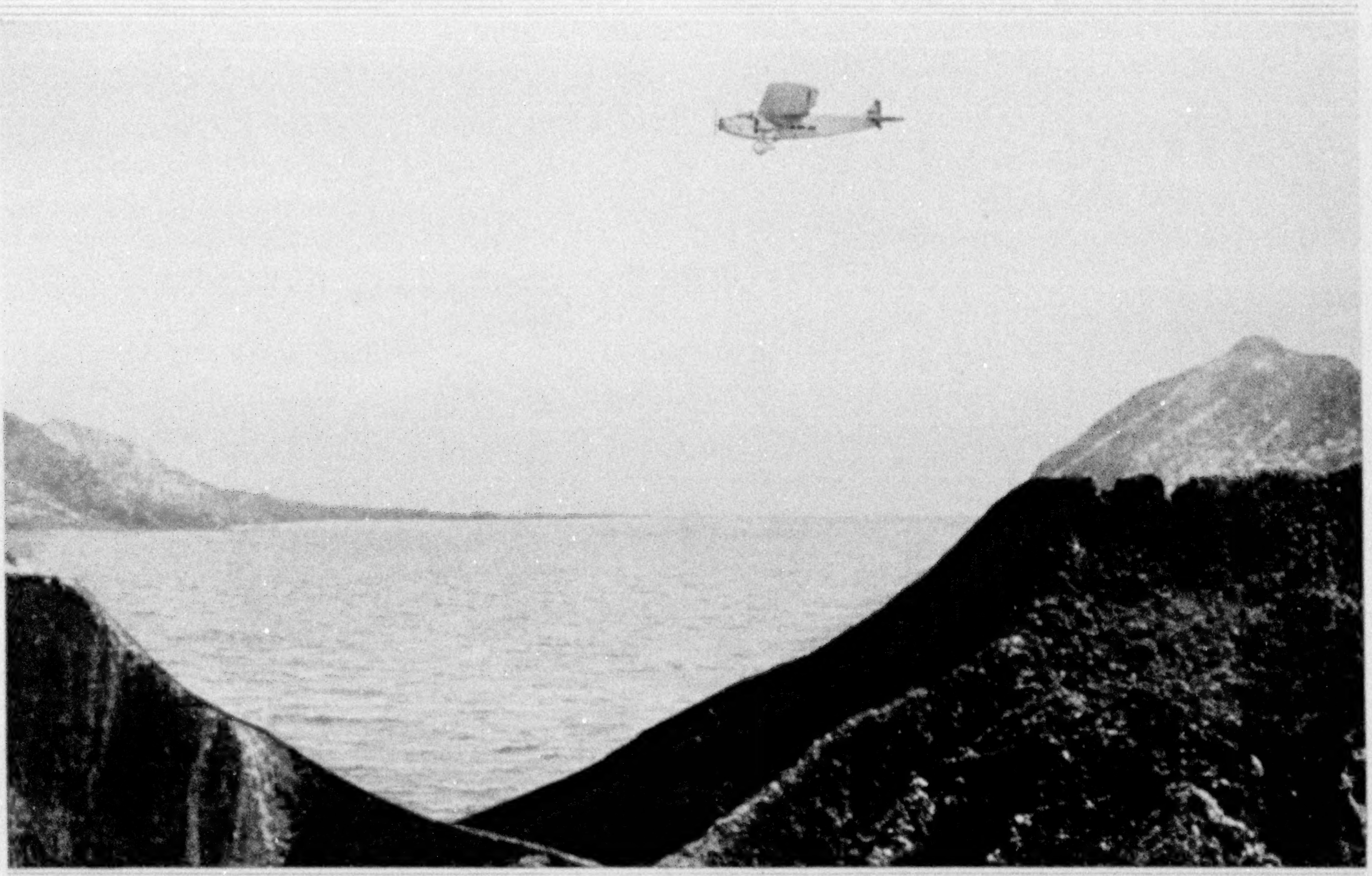

THE Forty-Niners looked up from their covered wagons in awe at the wheeling flight of the California condor. Today their sons and daughters look down from comfortable arm-chairs, shadowed by tireless duraluminum wings that outfly the lonely condor as an eagle outflies a sparrow.

Whole fleets of all-metal, tri-motored Ford planes wing up and down the coast, from San Francisco to Los Angeles and southward to Agua Caliente . . . and from Los Angeles eastward to join the great airlines that reach across the continent to the Atlantic Coast.

The T. A. T.-Maddux planes are today better known than the condors ever were, and they are as essentially a part of the blue Californian skyscapes, their shadows drifting with the regularity of the mail over snow-capped mountains, orange grove and purple sea!

So dependable are these lines using Ford tri-motored, all-metal planes that during the first quarter of the year passenger traffic increased 500 per cent over 1929. Four additional services have been added to care for the increase in traffic. Passengers carried this year are already being numbered in tens of thousands.

The T. A. T.-Maddux lines demonstrate daily that air transportation has definitely become the servant of business. For on the Western Coast business men are using them as a positive public necessity.

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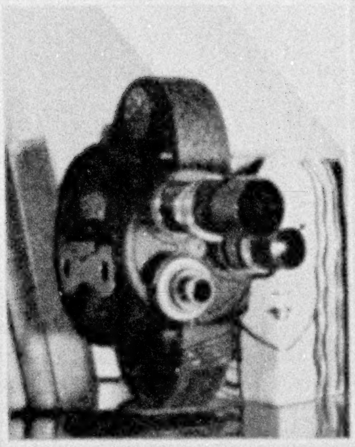

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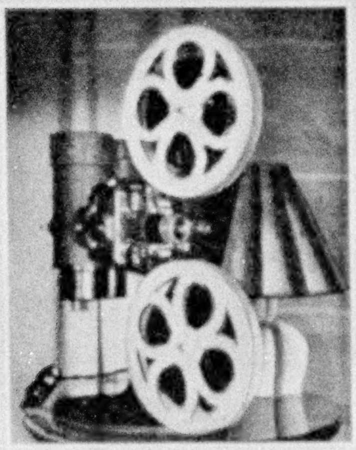

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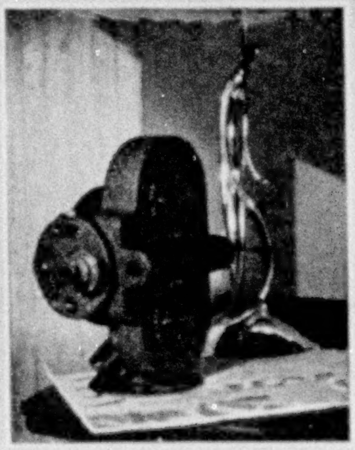

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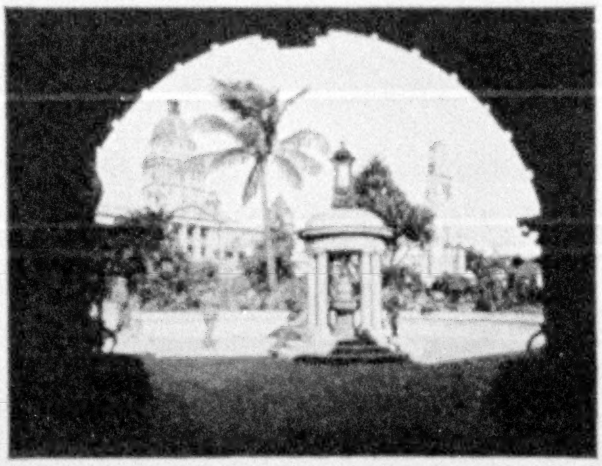

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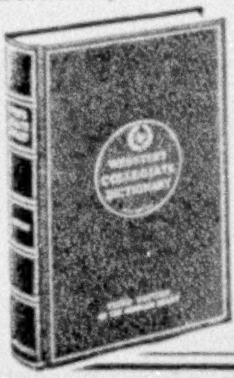

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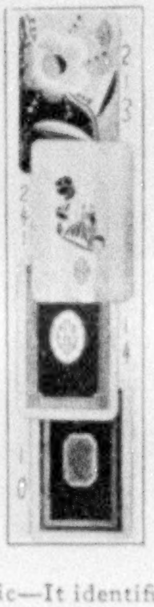

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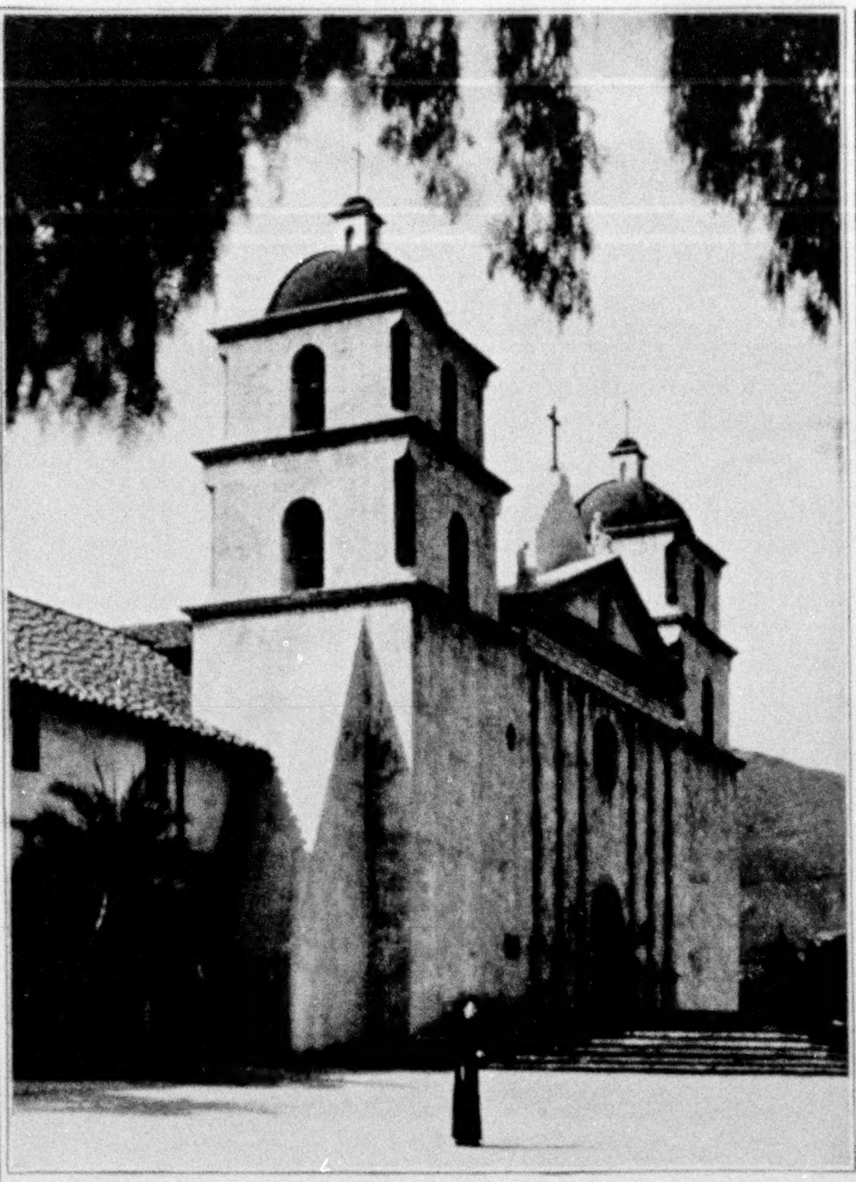

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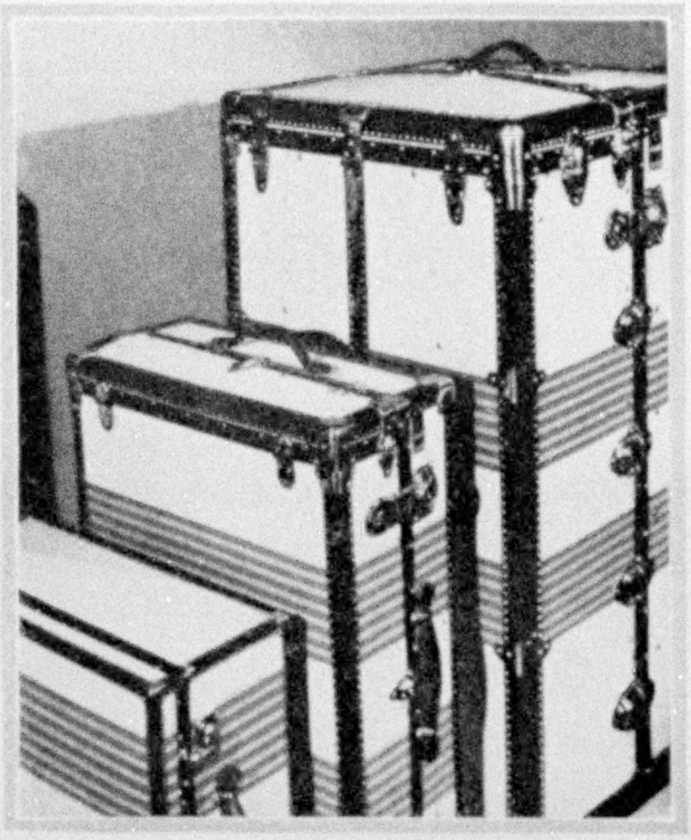

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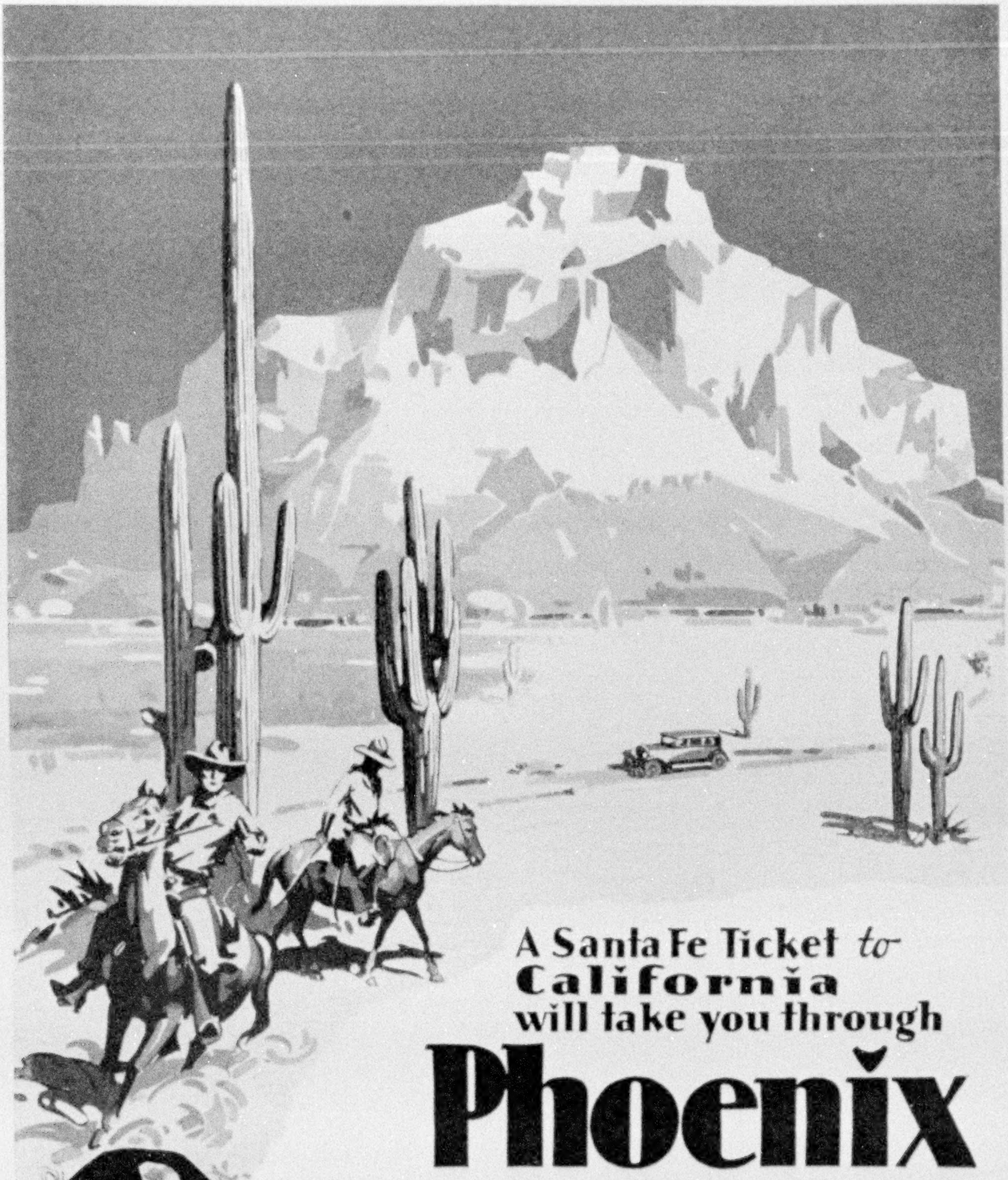

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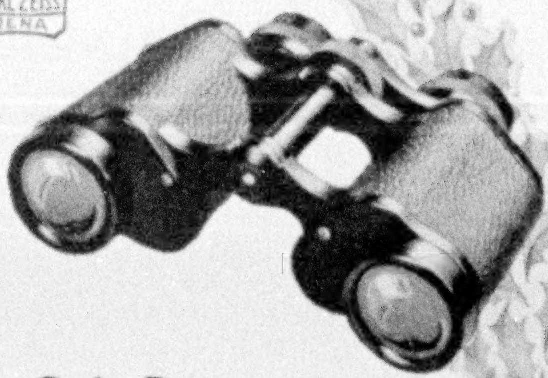

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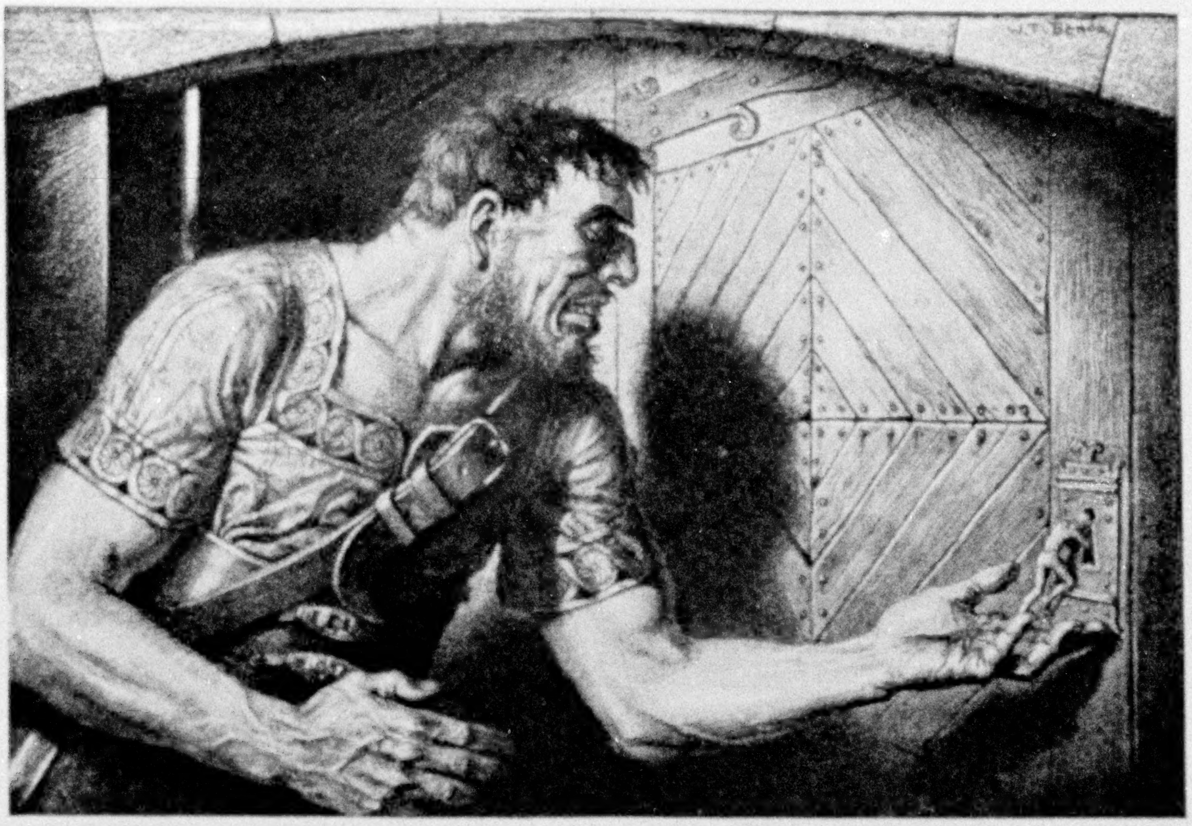
The Giant and the Pygmy



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EITHER from your own personal experience or from observation you know how miserable one can feel when suffering from a cold. Of course you know some of the causes—chilling drafts, wet feet, over-fatigue, balky digestion, or an invading germ. You know it is harder to fight a cold when you are run-down. Keep yourself fit.

For the sake of your own personal comfort you want to get rid of a cold in the shortest possible time. For your own personal safety and that of your friends you *ought* to get rid of a cold in the shortest possible time.

There are many different kinds of colds—hard to distinguish one from the other. All of them are threats and one leads to another.

The original cold, if not promptly cured, breaks down resistance and is sometimes followed by a second cold more stubborn and oftentimes more treacherous than the first. The mucous membrane of the nose and throat is so weakened by Cold No. 1 that the way is opened for dangerous germs to enter.

Cold No. 1 is the Pygmy that crawls through the keyhole and unlocks the door for Cold No. 2, the Giant. In fact, to carry the picture further, the Pygmy Cold, which may be nothing worse than snuffles, a slight cough, a bit of an ache or a pain, may be followed by any one of several Giant Colds—influenza, pneumonia or tuberculosis.

Take no chances the next time that symptoms of catching a cold are shown by you or someone in your family. Consult your doctor and dispose of the Pygmy quickly, before he can open the door for the Giant. At such a time a skilful doctor is your best ally and you will be wise in following faithfully his orders.

Metropolitan Life Insurance Company will be glad to mail free, its booklet, "Just a Cold? Or"—to anyone who requests it. Address Booklet Department 1230-N.

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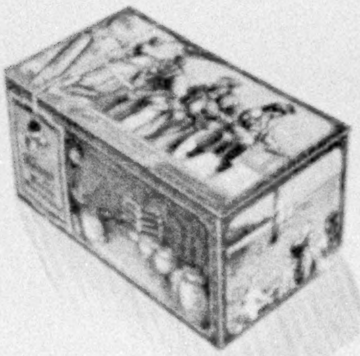
Whitman's CANDIES

Santa, who knows all candies, can't resist the SAMPLER. It's his favorite. With its ribbon and holly decoration or bright Christmas wrap, he will leave it in millions of homes this year.

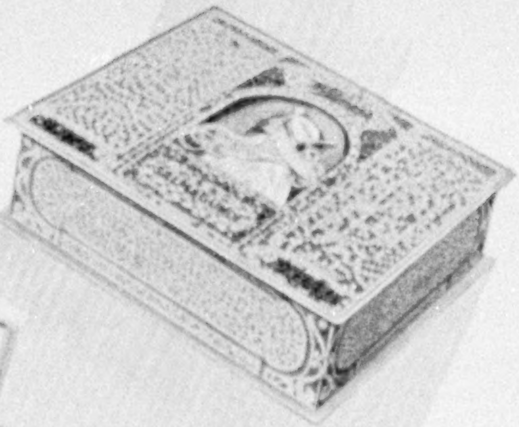
All over this broad land the shops and stores selected to sell Whitman's are overflowing with these sweets for the Christmas season, but they will melt away quickly. Do your Christmas shopping *now* to get fair selections.

PLEASURE ISLAND
The famous chocolate treasure in the box beloved by youth—$1.50 the pound. One pound and two pound sizes.



PRESTIGE
Dainty chocolates with select centers in this handsome metal box. One, two and three pounds—$2 the pound.

THE SAMPLER
The gift dependable. In 17-oz., two, three and five pounds, $1.50 the pound.



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Any telegraph office will transmit orders for any of Whitman's famous candies and deliver the package anywhere in the United States.

SALMAGUNDI
Chocolates of proven charm in a beautiful metal box. One and two pounds—$1.50 the pound.

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Vol. LVIII, No. 6 WASHINGTON December, 1930

THE NATIONAL GEOGRAPHIC MAGAZINE

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NEW GREECE, THE CENTENARIAN, FORGES AHEAD

By Maynard Owen Williams

Author of "Beside the Bosporus, Divider of Continents," "Unspoiled Cyprus," "East of Suez to the Mount of the Decalogue," etc., etc., in the National Geographic Magazine

With Illustrations from Photographs by the Author

AMONG the Centenary postage stamps of modern Greece, most of them picturing leaders of the Greek War of Independence which ended a hundred years ago, none is more interesting than that used on letters to foreign lands.

It contrasts, on a single map, the Greece of 1830 with the vastly enlarged Greece of to-day (see inset, page 652).

To my father, as to hundreds of classical scholars, there was never another land like classic Greece. Its glories were his table talk, the gods of Olympus his intimates. But when he visited Greece a quarter of a century ago and studied the classic sites, Zeus, Aphrodite, Hermes, and Apollo were "barbarians" to the extent that their Olympian abode was beyond the boundaries of Hellas.

The Hellenic Republic of to-day is twice as large and twice as populous as the Greece he knew. It no longer faces the past. Since he saw them, the very skies of Athens have changed. The prosperity with which Greece is now being rewarded for her hospitality to a million and a half refugees is smudging with factory smoke that limpid blue in which the ancient lapidaries mounted the precious stones of Propylæa and Parthenon (see illustrations, page 650).

The rambler in Hellas must ever beware lest he ignore the invisible emanations of classic glories. Perhaps the returned mill hand from "Haverhillmass," who acts as his mentor, is really Athena in disguise.

But here the lens must speak. Its task is not to interpret the past, but to picture New Greece, the centenarian. Let the Greece of Homer or Plato inspire us. The Greece of to-day will not betray our interest. Mere mortals now live in the haunts of the immortal gods, but they make it a friendly land.

The roughest peasant will not disillusion one who comes to Greece with the spell of the past upon him. Like the woman who spent the entire morning on the Acropolis without finding the "Four Horsemen," he may discover something finer than he sought. The Greece of reality, like that of dreams, is a land of inexhaustible charm.

SCIENCE POINTS US TO THE ACROPOLIS

In countless uncanny ways Greece links us with ourselves. We are astounded at what this rocky little land has done to and for us. Study the sciences whose names end in "ics" or "y" and your thoughts inevitably turn to the Acropolis. Aeschylus lifted the theater from low vaudeville to drama whose sublimity has never been equaled. Xenophon as a war correspondent has seldom if ever been surpassed. Pericles, Phidias, Thucydides, Iktinos, Herodotus, Sophocles, Euripides, Aristophanes, and Socrates—a single lifetime knew all those giants! Draw forth from

THE PARTHENON, WITH ITS NORTH COLONNADE RESTORED AFTER 243 YEARS

On May 17, 1930, eight columns, restored under the direction of the Greek architect Balanos and with the aid of American funds, were unveiled (see, also, Color Plate V). In the right foreground is a corner of the Propylæa, itself used as a powder store and fired by lightning in 1645.

THE ANCIENT STADIUM DURING A LYCEUM CLUB PAGEANT

The followers of Orpheus, wearing white, have triumphed over the Amazons of an earlier day. On the parapets, evzones (see page 655) stand like statues. Most of the crowd chooses the shady side. During the visit of delegates of the American Hellenic Educational Progressive Association (AHEPA) every seat was occupied. At the right end of the field are two ancient Hermæ, or turning posts. The stadium was sheathed in marble for the second time just prior to the revival of the Olympic games in 1906.

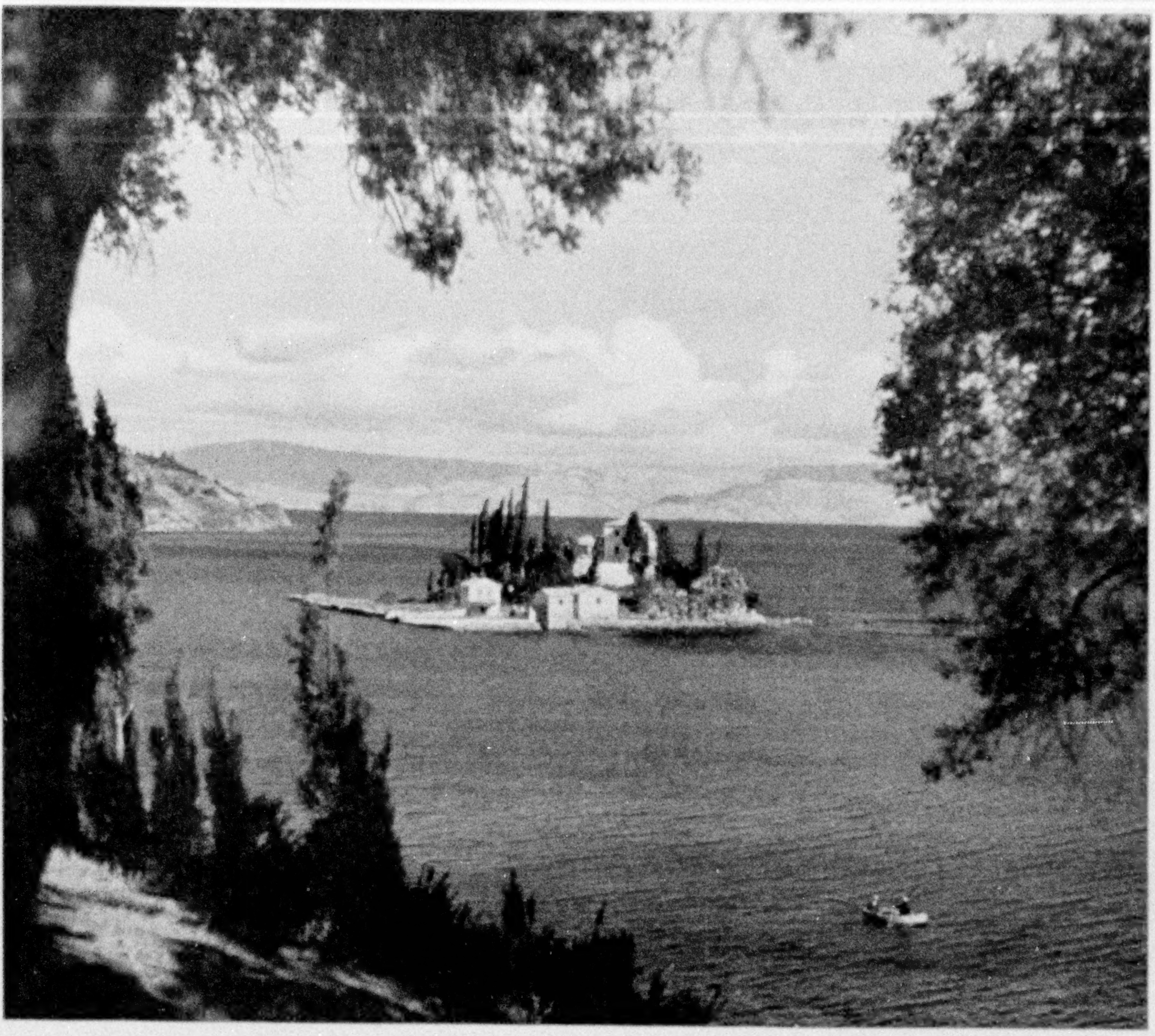
Drawn by James M. Darley

THE AREA OF MODERN GREECE APPROXIMATES THAT OF NEW YORK STATE

In the centenary year of its independence, Greece has a population exceeding six millions, with nearly one-sixth of that number concentrated in the capital city of Athens and its environs. The inset, showing one of the Centenary postage stamps (actual size), illustrates the territorial expansion of the nation since its independence was established.

time's obscure grab-bag the Biblical three-score years and ten; if they start in Greece with the Victory of Salamis, you hold history's grand prize.

Whether, after a hundred years of freedom from the Turkish yoke, modern Greece is entering another Periclean age no contemporary can say, but Hellas is vibrant with new energy. Refugees, at first a liability, have, within the last few years, become an asset. Their progressiveness, once a sore point with more inert Greeks, is a vital element in the heightened tempo of Hellenic life. Industries brought from Asia Minor are enriching the nation.



"THE SHIP OF ODYSSEUS" AT CORFU

Pontikonisi, at the entrance to Corfu's former naval port, is called "Mouse Island" because of its neatness. But legend makes it a petrified sailing ship, and to Homer it was "a mark of vengeance on the sable deep." In the Odyssey, he relates the story of how Poseidon vented his spite on Ulysses with the permission of Zeus, who said: "Friend, . . . when all the people of the town look off and see her sailing, then turn her to stone close to the shore, yet like a swift ship still, that all the folk may marvel. . . . And, glancing at his neighbor, a Phæacian man would say: 'Hah! Who stopped that swift ship on the sea as she was running in?'"

This winter, for the first time in history, Athens has an adequate supply of water (see illustration, page 656). In fertile Macedonia and Thrace new towns are springing up.

The close relationship with America is having a wide influence. We exchange men. We buy her best tobacco, currants, and carpets. Greece takes $25,000,000 worth of goods from us every year, and Greek-Americans send enough cash to their relatives in Hellas to pay the bill.

The landscape of Hellas fashioned early Greek character. Now, with fertile plains being tilled, lakes and swamps drained, and rivers tamed, the Greek is asserting himself in a renewed conquest of this historic land, its ample coastline washed by the much-murmuring sea.

ACROSS HELLAS BY AIR

It is typical of the spirit of the age that our first trip across Greece was by air. Our big seaplane flew from Troy to Ithaka in five hours. Odysseus spent ten years on the way.

Our return flight started in Italy and took five days. Circling above the lone pillar at Brindisi which marked the end of the Appian Way, we followed the fertile but malarial Italian plain to Otranto. As we crossed to Corfu, used by the first naval unit of ancient Greece, Italian destroyers plowed the same sea.

THE HOUSE OF PARLIAMENT AFTER THE FIRST INAUGURATION

Dignitaries leaving Parliament, where Admiral Konduriotis, the first regularly elected President of the Greek Republic, had just taken the oath of office, on June 5, 1929.

Almost scraping the rugged western cliffs and looking down on the idyllic monastic retreat of Palaeokastrizza, we circled the north shore of Corfu and came down the inside run beside Albania. Within sight of the Venetian forts of Corfu town, our Dornier Wal swooped to rest amid coveys of pleasure craft afloat in the evening calm.

This lovely island, silver with olive groves and dark with cypress trees, is famed for its beauty; but it was a tiny isle near the entrance to the former naval harbor of Corfu that made our minds call "contact" with the magic realm of Homer's hapless hero. This monastery base, ablaze with peasant processions at Easter time, is called the "Ship of Odysseus" because, against the wishes of Poseidon, it carried the wanderer home, and as a punishment was turned to stone just before it made port (see illustration, page 653).

HOME OF A TRAGIC EMPRESS AND A FALLEN EMPEROR

On the hills behind the spot where Nausicaa and her maidens "briskly trod" their laundry, as Greek countrywomen still do, the tragic Empress Elizabeth of Austria built a retreat from the world. She called it the Achilleion, and Achilles, handsomest Greek at Troy, is shown in statues and painting. In the hillside garden, which slopes to a private port on the sea, was a statue of Heine. After the assassination of Francis Joseph's unconventional consort, the villa was bought by the Kaiser, who substituted her statue for the, to him, unwelcome one of the German poet, wit, and travel writer. The

Wide World Photograph

FORTY-EIGHT SENTIMENTAL BONDS WITH GREECE

Evzones, members of the Presidential Guard, enter the Stadium in Athens bearing flags of each Commonwealth of the United States, presented by their governors to the President of the Hellenic Republic and carried in parade at a welcome to the Greek Section of the American Legion.

German imperial yacht often visited Corfu, and the Kaiser's presents to dancing peasant girls may still be seen among the bibelots which go with the native dress.

In an upstairs room the former ruler used to toil at his desk, sitting astride an adjustable chair shaped like a saddle. Island villa of two tragic figures, the Achilleion later became a war hospital and orphanage and may soon become a gambling casino, luring thrill-lovers to the spot where Elizabeth sought peace.

SCENE OF A LIGHT-CRUISER VICTORY

From Corfu we took off for Ithaka. On our left obscure masonry fragments dotted a narrow sand spit. Beyond was the Gulf of Arta, lined with malarial plains. These decaying remnants of Octavian's city of victory stirred my camera to action. But our military observer waved it aside.

"Forbidden!"

"Why?"

"Military zone."

"Of course. That's the site of the Battle of Actium."

"When was that?"

"31 B. C. That's where the Roman republic fell and the empire began."

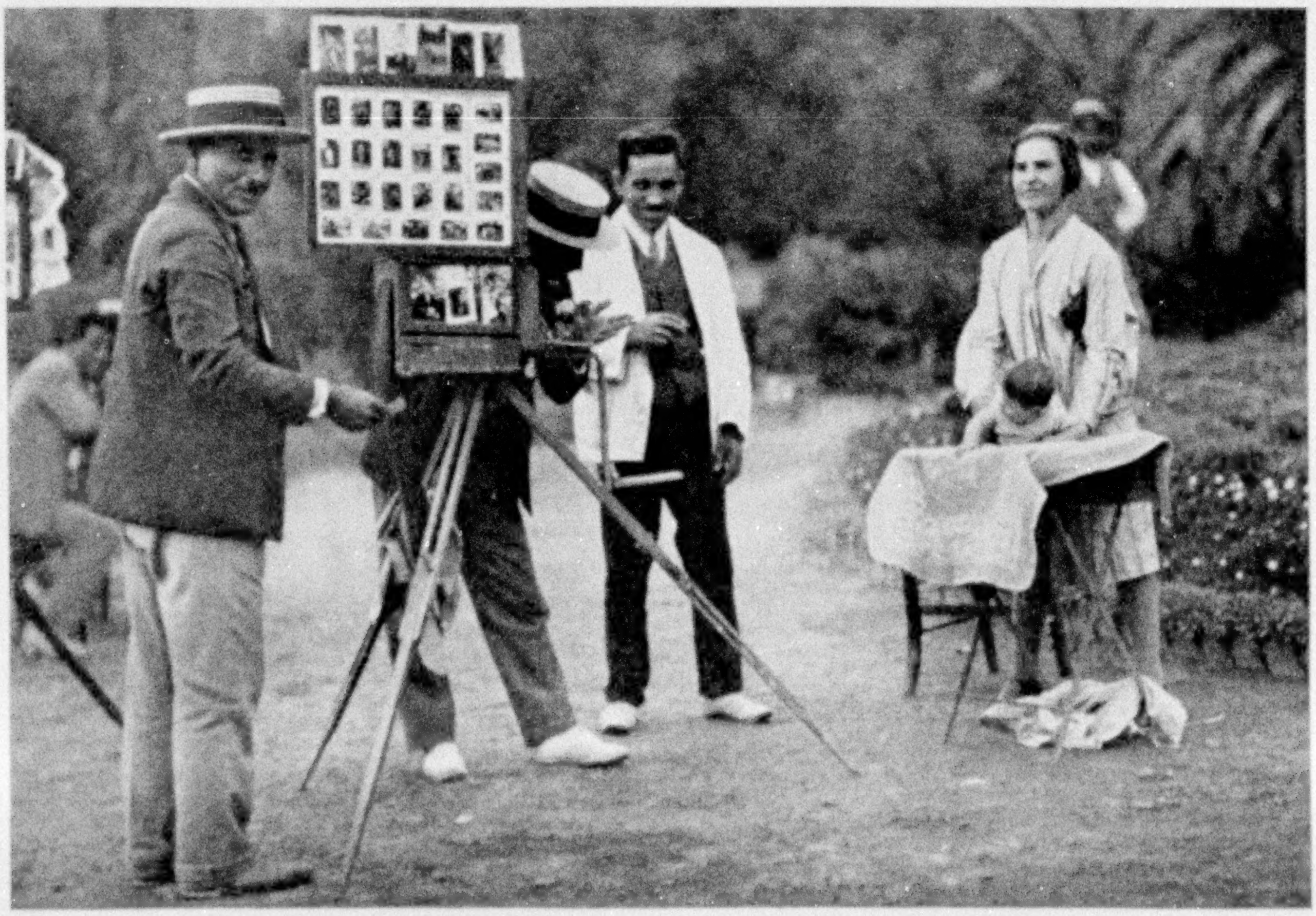
"Forbidden!"

Here the sluggish dreadnoughts of Antony were destroyed by the light cruisers of Octavian. From here Antony and Cleopatra fled to suicidal sword and asp.

The southern tip of the mountainous island of Levkas is called "Sappho's Leap." The probably fictitious story of her unrequited love and self-destroying plunge may

AN AMERICAN-BUILT LAKE IN DUST-DRY ATTICA

Fifty-six million cubic yards of water impounded behind this marble-surfaced dam, 950 feet long and 180 feet high, now provide Athens and its environs with sufficient water for the first time since Hadrian built his aqueduct, 1,800 years ago. Nearly a million people will be served by this project, whose dam is on the slopes of Mount Parnes, not far from the village of Marathon (see text, page 661).



THE MADE-WHILE-YOU-WAIT PHOTOGRAPHER, WHOSE NAME IS LEGION

Greece has thousands of camera men who will finish a passport picture, or what in a richer land would be an amateur snapshot, on the spot. One of them is here at work in the beautiful garden in front of the National Museum.

A CASH AND CARRY MARKET IN THE HEART OF ARCADY

In the Tripolis bazaar, old styles and new still meet without embarrassment. The market bag carried by the citizen is of peasant workmanship and the old man wearing the *fustanella* transports his stock-in-trade by automobile.

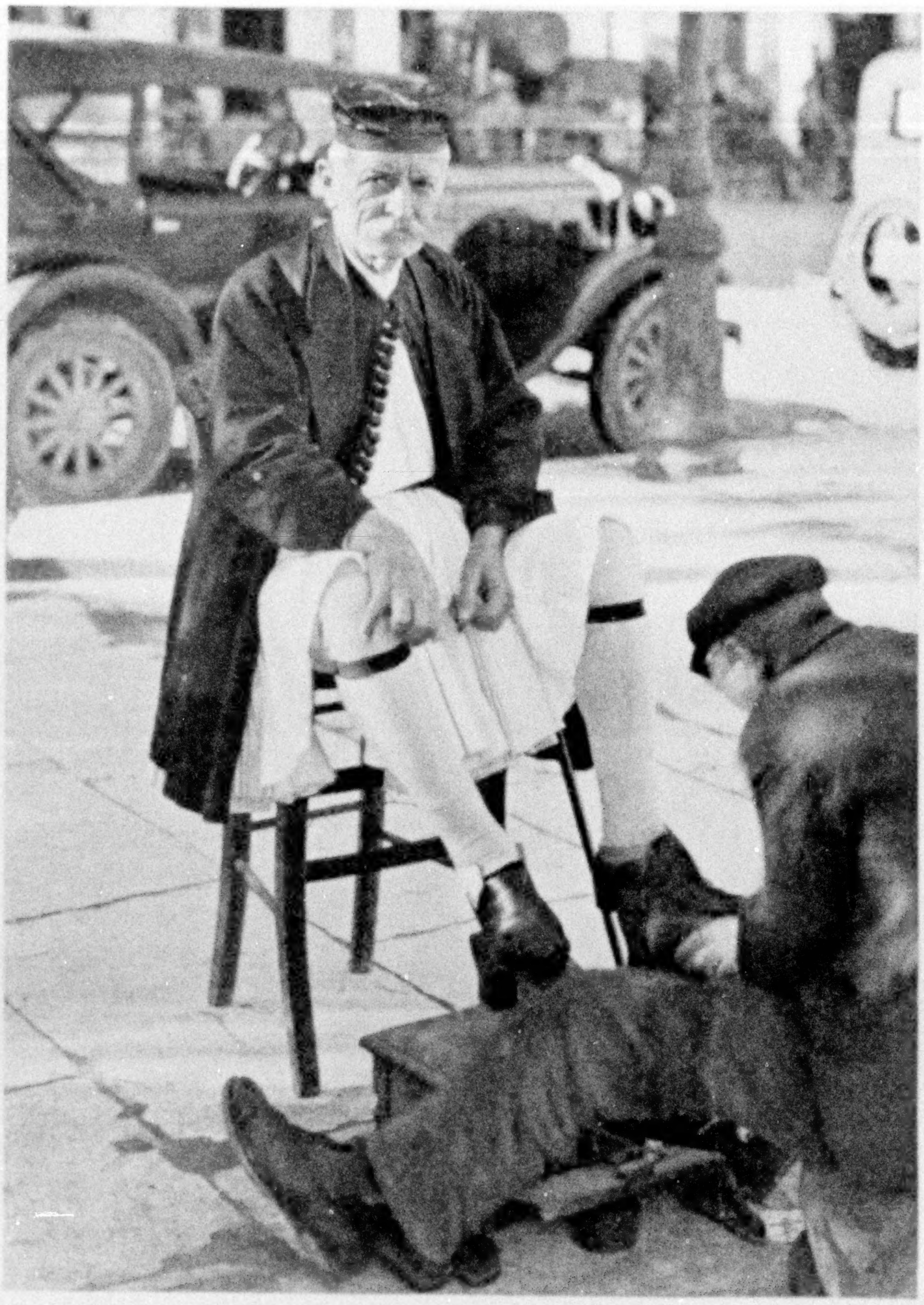
live as long as will the few genuine fragments of her lyric verse.

THE ISLAND KINGDOM OF ODYSSEUS

If the island now called Ithaka merits its name, our seaplane landed where Odysseus did, so far from his home in the north of the island that he did not recognize the site now occupied by Vathy, its chief town. Homer's description still fits the island remarkably well:

"Verily it is rough and not fit for the driving of horses, yet it is not a very sorry isle, though narrow withal. For herein is corn past telling and herein, too, wine is found and the rain is on it evermore and the fresh dew. And it is good for feeding goats and kine; all manner of wood is here and watering places unfailing are herein."

Settling down on Vathy by plane is spectacular enough, whether one hurdles the hill to the south, almost grazing the windmills, or swoops in through the dog-leg entrance. But getting away into a north breeze is something to remember.



AN OUTDOOR BOOTBLACK IN PATRAS

The patron is wearing the *fustanella*, originally Albanian, later considered as the Greek national dress, but now seldom seen in the cities. The kilt gives its name to the entire costume, now worn principally by mountaineers and members of the Presidential Guard (see Color Plate XI and page 655).

Arquebus and bowgun, artillery and grappling iron, hurled anachronisms at one another. During the conflict a Spanish soldier had his left hand maimed "for the greater glory of the right." Had he been killed we should never have known the chivalrous Don Quixote and the cautious Sancho Panza, creations of a poet, playwright, and novelist whose immortal pen never earned his daily bread.

A few miles farther on is a site upon which another genius left his mark.

At Missolonghi, Byron, who had contributed $2,000 a week to the revolutionary cause, died of fever. Upon his coffin helmet and sword rested beside the laurel crown, and his once fickle heart is buried in the land to which he so unreservedly gave it. A shallow lagoon, cobwebbed with fish traps and crossed by causeways, almost isolates the town. One wonders how its defenders of a century ago staved off famine as long as they did. When a desperate midnight sortie failed, on April 22, 1826, the revolutionists blew up the place, killing Greek and Turk alike.

Dead ahead is the plateau of Anoï, half a mile high, and not a chance in a thousand to clear it. By tipping over onto the right wing, when the cliffs seem about to touch the pontoons, the plane swings out over the gulf.

Near the Oxia Islands the surging waves still echo with fame. Here united Christian and consolidated Moslem forces fought the Battle of Lepanto (Naupaktos) in 1571—last crusade, last great battle of oar-driven men-of-war, first humbling of the conquering Turkish fleets, propelled by Christian galley slaves.

THE PORT OF PATRAS FACES WEST

We crossed to Patras, the only important Greek port which faces the west. It may become great. Once a month a huge liner calls here on its way to America. Boatmen wrangle, red tape entangles the stranger, and fumigation labels are smeared upon one's baggage as false evidence that the contents have been disin-

fected. At this hectic time it is one of the few places where the allegedly rapacious Greek deserves his reputation. Some day passengers will be treated as considerately as currants already are.

Greek currants are actually small, seedless grapes. Patras is not only the chief port for the vineyards of the Ionian Islands, but is near the center of the fertile crescent of currant vines that curves around the mountains of Achaia and Elis from Corinth to Kyparissia. We might call currants "Corinths," for Corinth gave them their name.

Four tons of grapes, making a ton of sun- or shade-dried fruit, are grown on each of the 170,000 acres devoted to their cultivation. Australian and Californian currants are serious rivals and our own imports of Greek currants have decreased.

ATHENIAN GIRL AND PARNASSIAN SHEPHERD WEARING THE FUSTANELLA AT DELPHI

Just to read a currant advertisement makes one expand his biceps and contract his waist. The training tables of ancient athletes abounded with currants, whose sugar and iron helped winners to win—and losers to lose—like men.

Our plane follows the shoreline of the Peloponnesus, with Parnassus across the Gulf of Corinth and Chelmos and Kyllene raising their 7,700-foot slopes into the clouds just beyond our right wing. Where the mountains break to the cultivated coastal plain are naked, water-worn banks. Highland meadow, eroding clay bank, and fertile plain are all cut by river beds, now stonedry, now raging torrents. The railway, crossing wide expanses of gravel, goes on stilts lest a cloudburst sweep it away.

To escape the bad lands at the mountains' base and fly past the fertile plain to Corinth is a matter of minutes, and a flight over the four-mile canal, straight as a ruler's edge, lasts for only a few breaths. The fastest ships from Constantinople to Brindisi here escape the rough seas of the ancient route around the Peloponnesus, and Hellenic shipping, serving a land without a single highway from the Ægean to the Ionian Sea, uses the canal, and thus shortens to 120 miles its voyages from the Piræus to Patras, otherwise nearly three times as long (see page 678).

If Actium and Lepanto were unusual battle sites, what of Salamis? With refugees from Athens huddled on the small island, beautifully armored warriors of

THE MILITARY PORT OF MUNYCHIA IS NOW A PLEASURE HAVEN

Around this, one of three ancient harbors of the Piræus, there once were eighty-two slips, each for a trireme, possibly 165 feet long. Now it shelters yachts and sailboats. In the middle distance, between the water and the street level, are temporary shacks crowded with refugees from Asia Minor.

Xerxes lining the shore of Attica, and the very Acropolis in Persian hands, the outlook was gloomy. The Periclean Age, and all it meant to Greece and to us, hinged on that one battle. Themistocles so placed his ships in the narrow straits that his own men had no alternative but to fight to the end, and the Persian ships lacked room in which to maneuver to advantage:

"At first the main line of the Persian fleet
Stood the harsh shock; but soon their multitude
Became their ruin; in the narrow firth
They might not use their strength, and, jammed together,
Their ships with brazen beaks did bite each other
And shattered their own oars. . . ."

When the Greeks won, Athens became great.

For two days high winds held our plane at Phaleron, seaside suburb and seaplane port, whence the Syngros Boulevard runs high, wide, and handsome toward the two detached columns of the temple of the Olympian Zeus in Athens. Then down we flew to beauty at Sunion and ugliness at Laurion. Rows of metal-roofed shacks squat around an oil-smeared harbor.

GRIM ACCIDENT INSURANCE OF THE ANCIENTS

This haunt for grimy miners, pushing feeble oil lamps into coffinlike shafts, raised Athens to its golden glory. We are over the ancient silver mines where a citizens' corporation divided the profits and slaves shared the toil. Accident insurance was grim. The ancients, meting out

EASTER CANDLES AND FIREWORKS FOR SALE AT THE PIRÆUS

Bits of wax like the cicatrices on a savage decorate these ceremonial candles, around which silk or paper bows are tied. Roman candles and firecrackers are sold at the same booths and help celebrate the same holiday.

capital punishment to one who injured a mine prop, used the principle, "A death in time saves nine."

When surplus profits piled up, Themistocles, putting common defense above individual gain, here financed the fleet of Salamis and ushered in the Age of Pericles. Until the coming of bimetallism and Macedonian gold, Laurion produced silver. But here modern mining, like Bassanio, finds fortune in lead.

Between Laurion and Thoriko, the countrytop is dotted with brown-tiled chapels, cypress-framed. Far in the north a snow peak hangs weightless in the blue. On our right wheel the Cyclades. Keos, Kythnos, Syra, and Andros all have identities, but the farther isles are close-linked as sausages.

Below us two pairs of Bari boats, their sails like quill pens dipped in a sea of writing fluid, comb the waters for fish. Gull wings glint where the wave-silvered rock edge of Greece breaks darkly to the Ægean.

On a former flight, Marathon from the south had measured up to the lines:

> "The mountains look on Marathon,
> And Marathon looks on the sea."

But as we flew directly over the soggy plain, where the Greeks, under Miltiades, won a decisive battle with the loss of less than 200 men, I thought of their enemies, a horde of Persians, milling about in this Slough of Despond and leaving 6,400 dead upon the field.

Over Chalkis we flew and near Skopelos soared like a scout plane above the

THE FAVORED SEAT AMONG FIFTEEN THOUSAND IN THE THEATER OF DIONYSUS

The seat of the High Priest of Dionysus Eleuthereus has suffered little since Aeschylus first used dialogue in this theater.

Time and again we returned to the attack. Only by bracing my head on the ceiling could I keep my lens pointed out of the window at the heaving landscape. After diving down several times on cliff-shelved monasteries in which the Middle Ages are preserved, we hurdled the Athonite Peninsula into the calm of the eastern shore.

Thirty minutes over the medieval monastic republic so entranced me that I returned later to share the life of the monks for thirty days. But blood-red churches and tall, square keeps could not hold us then. When the last of the twenty monasteries, set in green pastures, had dropped astern, we turned to the east and had lunch at Mudros, where the Anzacs found shelter in the same bay the Greeks had used during the Trojan War. Troy itself was lost in its wide, flat plain; but two hours later the afternoon light lifted above fertile field and cypress-darkened cemetery the storied walls of Byzantium.

British Mediterranean fleet at its maneuvers. As we sped above these wheeling dreadnoughts, Salamis, Actium, and Lepanto seemed far away. Dozens of small planes rested on the broad deck of a carrier, but we seemed to command the air.

From that moment on, Mount Athos grew before us until it loomed above our wings. Winds from the Dardanelles, meeting on the lee side of this 6,000-foot marble pyramid, gave us the bumpiest ride I ever experienced. We side-slipped and bucked in a way which our Greek military escort called "not at all funny," and at one moment I glimpsed a camera case floating in the air like the lady in a levitation act.

TOURING THE PELOPONNESUS BY PRIVATE RAILWAY CAR

To know Greece, one must circle the Peloponnesus, chief battleground in the war of independence. Only one rail motor car, a "two-lunger" dating from the goggle-and-gauntlet days, can make the trip, as the road system is not complete. The original idea had been to ride on the cowcatcher of a locomotive, photographing as I went; a last-moment decision, however, placed under my orders this anti-

quated but highly useful convert from roads to rails. As we rolled out of Athens, honking for crossings which amiable old women protected with hastily hung chains, the responsibility of having a railway of my own grew upon me.

Initiates used to arrive at Eleusis, home of the Eleusinian Mysteries, after an all-night torchlight procession over the Sacred Way from Athens. We rolled alongside a gaily decorated train. Where rival Greeks from Sparta, Thebes, Corinth, and Athens once disputed the way, these united Greeks were holding a reunion — of the *American* Legion.

Prosaic factories now line the shore where Phryne, stepping from her garments into the sea, showed the curious populace how worthy of Praxiteles's chisel was her beauty. The noonday glare on the big bare site of the Temple of the Mysteries does little to stir the imagination.

A SKYROS-STYLE COUNTRY HOUSE NEAR ATHENS

The bedroom is a balcony opening directly on the living room, whose walls are decorated with choice bits of crockery and copper plates. The chairs, unusually small and low, are popular with Athenians and travelers.

We waved good bye to the former doughboys and chugged on to Megara, where women carry water up camel-hump hills or tend their outdoor ovens in a native costume, which one is surprised to see so close to Athens.

In the plain beyond the town, rude shelters are erected at Easter time. Here the men may sit and drink and watch the long lines of dancing women, bright with crimson jacket and gold braid, weave up and down the dusty road. Albanian colonists, settling the region, affected its dress, but the inhabitants of the town boast pure Greek blood (see Color Plate XIII).

When we started from Athens my driver and conductor expressed their desire to do "anything" for me. "See to it that we never delay a train," was my only request. When we arrived at the Skironian cliffs a following train was already climbing the grade; but we stopped to photograph this still dramatic passage between the mountains and the sea. Modern travelers object because the road is not smooth, but a century ago this route was almost as dangerous as when the robber Skiro used to play football with travelers. Theseus, the boy hero of his day, drop-kicked the bandit into the sea from

the cliffs that bear his name. Now both trains and autos pass along the Attic Corniche without giving the mythological story a thought.

As the earthquakes of 1928 had wrecked most of the buildings near the canal, we turned our attention to the coast pines. Near the base of each tree trunk is a cup for resin.

Dionysus was god of wine, but his scepter ended in a pine cone. The Greek continues both traditions by mixing up to 10 per cent of resin with his wine, thus drinking the fruit of forest as well as vineyard. The resin adds to the keeping qualities of the wine, especially among drinkers who do not like resinous beverages, and is considered an aid to digestion. Strangers, skeptical as to its therapeutic qualities, do admit that it *tastes* like medicine.

At Corinth it was a pleasure to drink deep from the Peirene spring, 2,500 years old and still going strong, for carrying a camera to the top of Acro-Corinth creates thirst.

EXCLUSIVE PICTURES OF A HISTORIC BANNER

Beyond the Corinthian plain the mountains approach the gulf, and a small mountain railway climbs a crack in the steep northern façade of Achaia. At the terminus we left our private car and tramped over the hills to Hagia Lavra. The monastic treasury had been robbed a few weeks before and the monks did not feel inclined to take the precious relics from the cases. But my interpreter turned the trick.

"You say the banner raised by Germanos has never been photographed? Suppose somebody stole *that!* How could you identify it? This gentleman represents a magazine that goes all over the world. If he were to photograph your treasures, there's not a spot in creation where a thief could hide them."

So we got exclusive pictures of the banner under which the Greek revolutionaries first rose against the Turks, in 1821 (see page 685).

Back across the hills we almost ran; then up to Megaspelæon, "Big Cave." The monastery, clinging like a swallow's nest to the overhanging cliff face outside the grotto, intrigues the photographer. But Megaspelæon boasts a good hotel, with a marvelous view toward Arcadia, and my companions had ordered lunch. The sky darkened while we ate. Sending my companions ahead, I fed my camera with scenery and then rushed to a train which did not arrive for half an hour.

AT THE HOME OF THE OLYMPIC GAMES

The railway so tunnels the cliffs and bridges the narrow gorge that no other way is open and doors are fitted to the tunnel mouths to prevent trespassers from using the tracks for a roadway. Permission can be had for going down the gorge on foot, but our feet did not covet this privilege. In the morning we chugged on to Patras and took shelter in the long arcades while a torrential downpour swept the city. Then we detoured to lovely Elis and the home of the Olympic games.

The maze of ruins between the Kronos Hill and the ditchlike Kladeos requires long study, for stadium, temple and battlement, treasure house, and Byzantine church are closely ranged about the festal square.

Storm clouds made the sacred precinct dramatic. This variegated countryside still appeals not only for what it retains of the past, but for what it is. Where is there such a place to sit and dream as here, where picked men from the whole Hellenic world met in a month of friendly training before competing for the victor's prize—a simple olive branch?

As Hellenic influence spread, competitors in the games came from Asia Minor, Egypt, Thrace, and Italy. Two Roman emperors, one more notorious as a fiddler than as an athlete, won victories at Olympia. Barnstorming professional athletes finally ruined this great athletic meeting, and when, after 1,170 years of influence in the physical and intellectual life of Greece, the games were suppressed by the Byzantine Emperor Theodosius, Alaric the Goth was already advancing on effeminate Athens.

In Greece, as in Palestine, one usually gains little by going under a roof, but it is worth a long journey to stand in the museum at Olympia beside the Hermes. Perhaps no other famous statue so defies reproduction. From the foot, which one expert calls the finest relic of antiquity,

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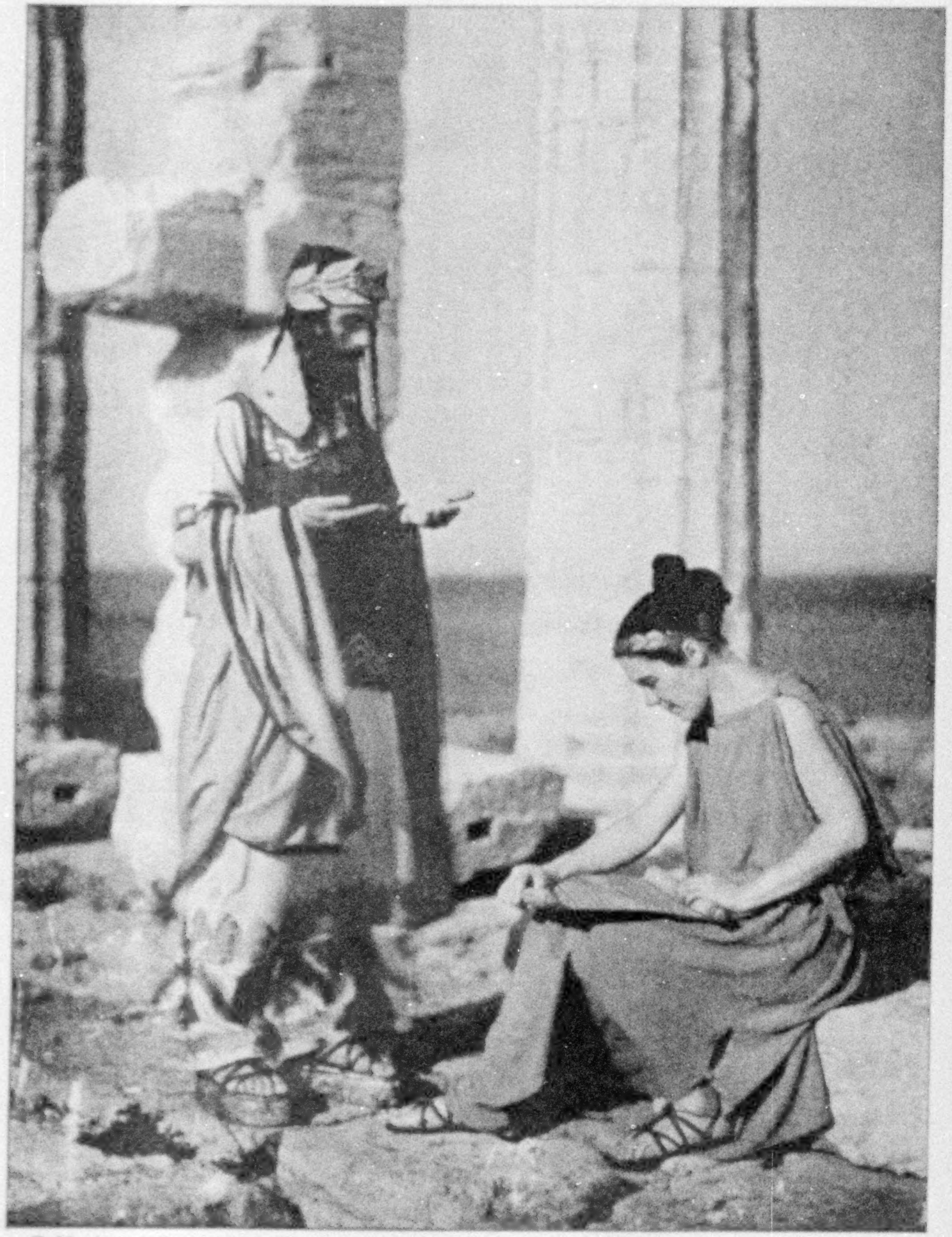
AN ANCIENT TEMPLE LESS THAN A CENTURY OLD

In 1687 this temple to Athena Victory was razed and its white Pentelic marble used in Turkish bastions. Only in 1835 was it reconstructed in its original position. The young women are wearing the costumes of Maina, at the tip of the Peloponnesus, and of Trikeri, at the end of the peninsula outside of Volos.



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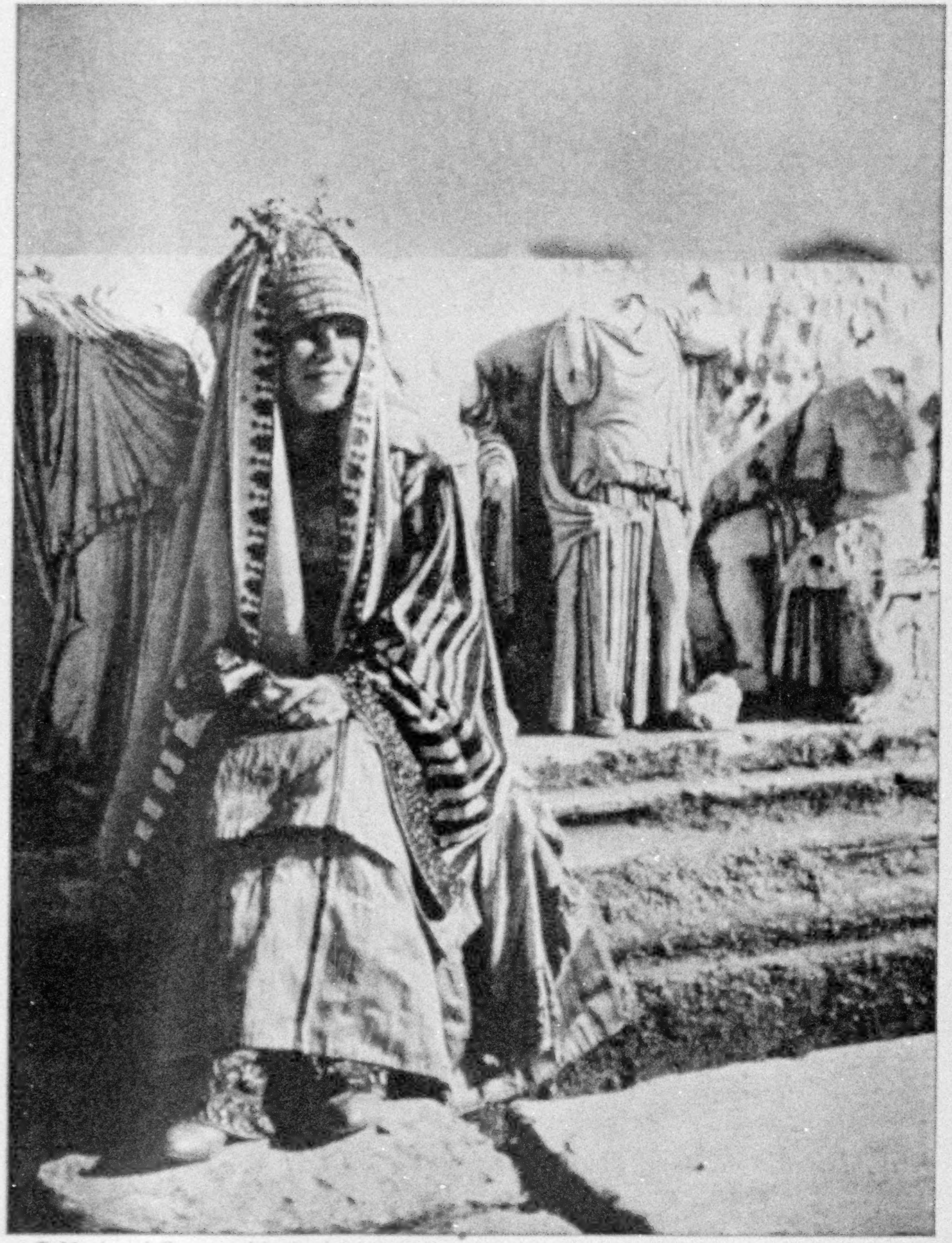
ON ATTICA'S BOLD HEADLAND

Classic costumes beside the time-bleached skeleton of Poseidon's Temple at Sunion (see also Color Plate VIII).

Natural-Color Photographs by Maynard Owen Williams

VISITORS FROM NAUSICAA'S ISLE

The Corfu costume adds color to the Propylæa, vestibule to the Acropolis of Athens.



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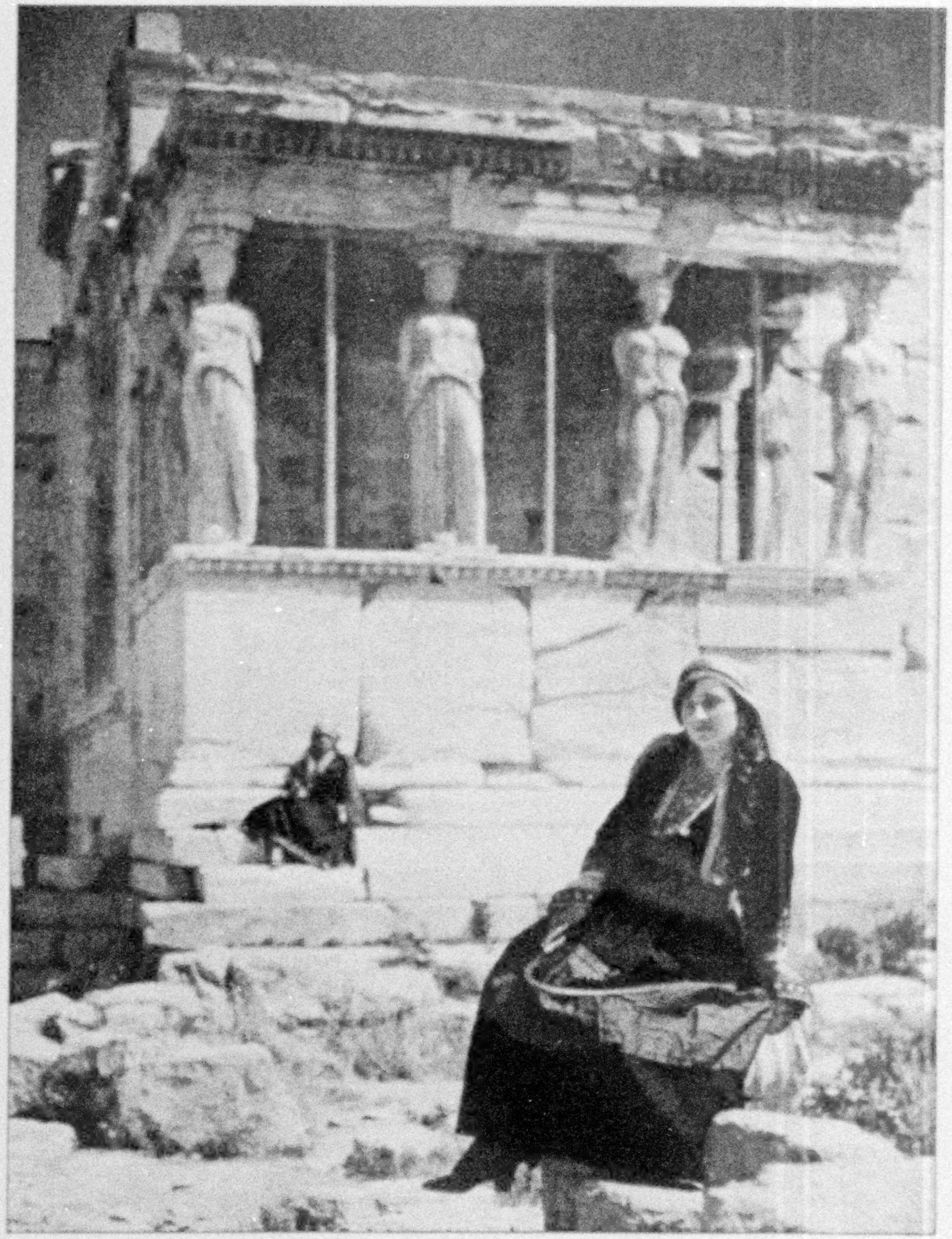
A ROMAN PROSCENIUM IN ATHENS

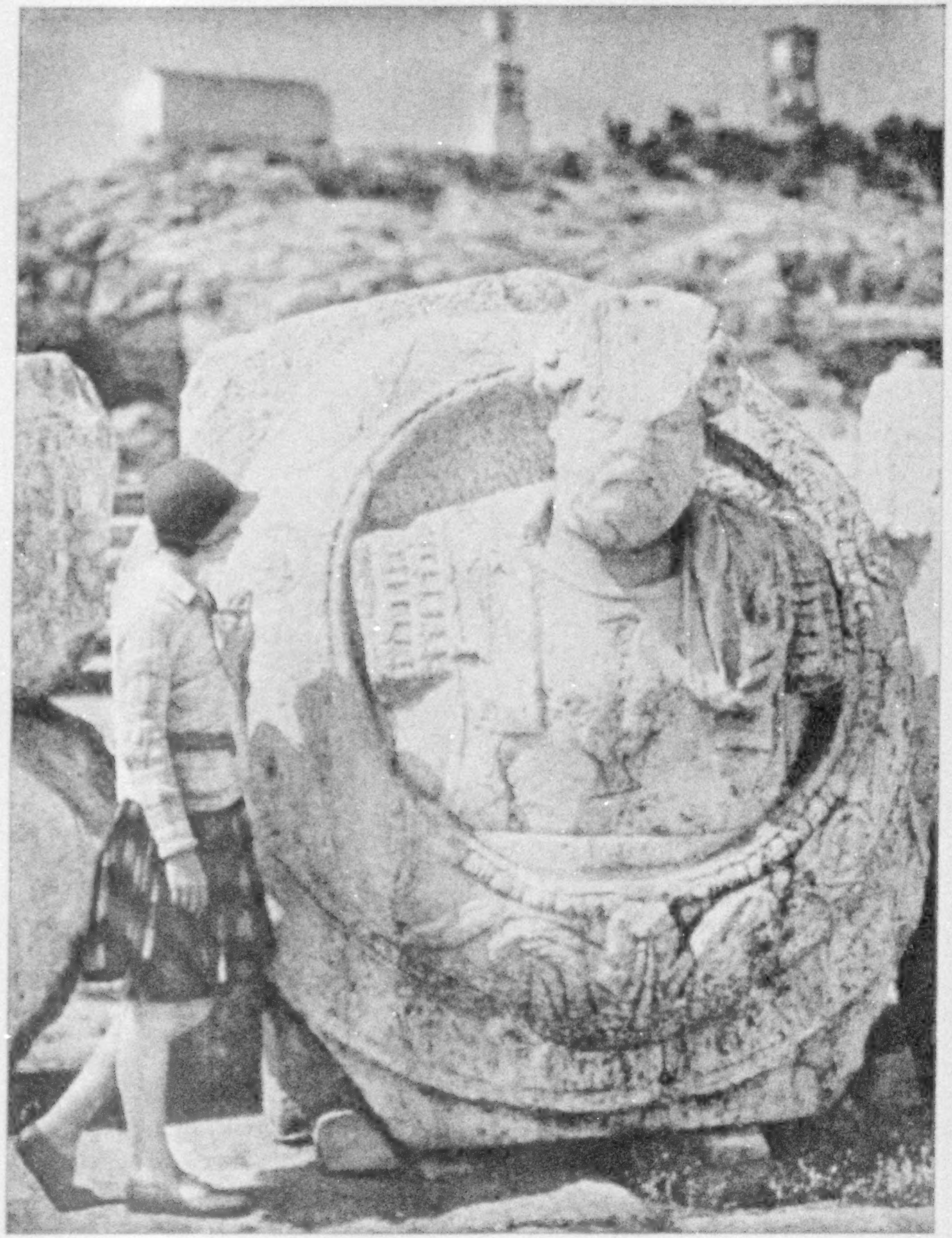
This stage wall dates from the time when Greece was a Roman province. The costume comes from one of the Dodecanese.



Natural-Color Photographs by Maynard Owen Williams

THE PORTICO OF THE CARYATIDES

Maids of Athens wearing the dress of Trikeri and Maina near the famous Porch of the Maidens (see also Color Plate I).



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MEDALLION OF A ROMAN EMPEROR AT ELEUSIS

So well did the Mysti (Initiates) of Eleusis guard their secrets that they gave their name to all mysteries.

Natural-Color Photographs by Maynard Owen Williams

WEARING THE DRESS OF THE MINOAN REALM

Cretan costumes worn in a historical pageant in the ancient Stadium at Athens, its marble twice restored in 2,200 years.

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Natural-Color Photograph by Maynard Owen Williams

CHASTE TRIBUTE TO THE VIRGIN ATHENA

Greek temple, Byzantine church, and Turkish mosque, the Parthenon is regaining its original form. At the left is the scaffolding of the workers who have recently restored eight columns overturned by the explosion when the Venetians blew up the matchless structure which was being used as a Turkish powder store in 1687.

SANITARY MEASURES IN NORTHERN GREECE

Near the Jugoslavian frontier, Greek women dig riverside pools from which to scoop up sand-filtered water for drinking.

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NAUPLIA, FIRST CAPITAL OF MODERN GREECE

A century ago, when Greece was declared an independent and sovereign kingdom, this Gibraltar, guarding the plain of Argos, was the first seat of the new government.

REFUGEES FROM TURKEY DRYING INDIAN CORN

In the Macedonian plain near the site of Pella, where Alexander the Great was born, these women are selecting seed for next season's planting.

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ANCIENT SATYR AND MODERN MAID OF ATHENS

A daughter of Attica wearing the costume of Gida, Macedonia, near the Silenus figure which a Roman architect added to the Theater of Dionysus, first home of Greek drama (see Plate III).

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HILL-TOP SHRINE TO THE GOD OF THE DEEP

Like a winged victory on a trireme's prow, the white columns of Poseidon's Temple at Sunion grace the bold cliffs beside the Aegean. A modern adaptation of ancient dress is here worn by noted Greek dancers.

to the handsome head, Praxiteles and his marble collaborated in a masterpiece of which a plaster copy seems a death mask.

At Kyparissia we left the currant crescent and entered the realm of the olive, passing between the hilltop temple of Bassæ and the mountain fortress of Ithome into the fertile Messenian plains. The view from the summit of Ithome is magnificent. To the east the snow-topped line of Taygetus hides the city of Sparta, "where the walls were men, and every man a brick." In good weather one crosses Mount Taygetus through the Langada Gorge and comes down on Mistra, the finest Byzantine town in the world. Here, as at Mount Athos and Meteora, the Middle Ages linger on.

BYPATHS IN ARCADY

No better excursion center exists in Greece than Tripolis, at whose weekly market one sees fine peasant types. The pedestrian has, between Tripolis and Olympia or Kalavryta, all the charm of Arcadia. The River Styx, the Stymphalian Lake, the Temple of Bassæ, the peaks of Chelmos and Kyllene—what lover of Arcady could resist such challenges to adventure? Oak grove and mist-hidden pines, fertile valley and rocky glen, each has its appeal. Here one might let the ancient temples mute their message and revel in such unspoiled beauty as inspired their builders.

A banal adventure at Karytæna thrilled me as much as did the quiet beauty of Arcadia. Blood-red precipices, flanking a ghastly gorge, lead up to a 13th-century castle erected by Geoffroi de Villehardouin, historian of the Crusades, and his Burgundian knights. "Feudal Greece is embodied here" and Baedeker emphasizes the impregnability of the site. An easy path facilitates the climb, and when I stood at the castle's top I was almost contemptuous. Then a wind carried away my focusing cloth, which came to rest on the steep escarpment at the castle's base.

Getting that essential bit of my equipment involved some scrambling. I came to have more respect for the "impregnability" of the castled crag. Hot and tired, I entered my car and drove on toward Andritsæna only to discover that I had had an adventure.

From the café my Greek driver and some townsmen had seen the cloth float away.

"That's the end of that," said one. "I know every inch of that rock and no man can climb it."

My chauffeur loyally defended me, and when he saw me recover the cloth he made capital of the fact.

"We folks take life easy. If a thing is hard, we think it's impossible. But an American *works* for *his* money."

THE GREEK FROM AMERICA PINES TO RETURN

The problem of the Greek returned from America is dramatic. When the war was over, filial piety caused hundreds who had served in the American Army to return to Greece. Hundreds more, who had made money, rushed back to help their poverty-stricken relatives. There most of them have stayed.

The one-paragraph drama is stereotyped:

"I was a fool not to become a citizen. America is the best country in the world. Now I have to wait for my place in the quota. Maybe I will never get back."

Life in America has unfitted these men for the leisurely existence of a mountain village, and no more severe critics of Greek inactivity exist than those who returned with eagerness and remain with reluctance.

Our welcome was equally stereotyped.

"You American?"

"Yes."

". . . that's fine. Where you from?"

"Washington."

"Wash'ton State or Wash'ton, D. C.?"

"Washington, D. C."

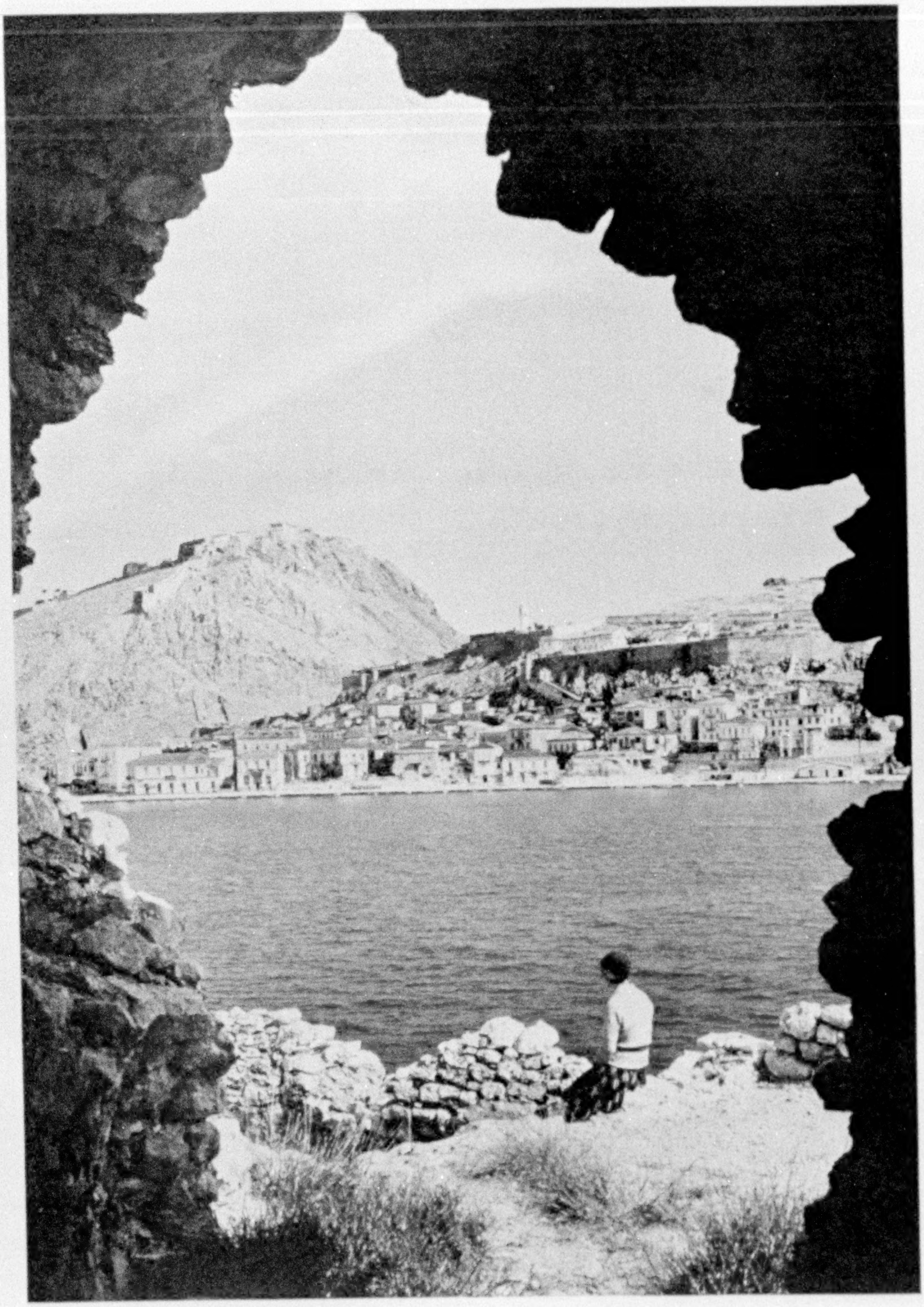
"That's pretty good. You're lucky guy."

At Dimitsana, ridge-top town in Arcadia, the formula varied a bit.

"Wash'ton, D. C.? . . .! You got, anyway, twenty-five families from Dimitzana in Wash'ton, D. C., right now. This li'l town got more men in United States than any other town in Greece."

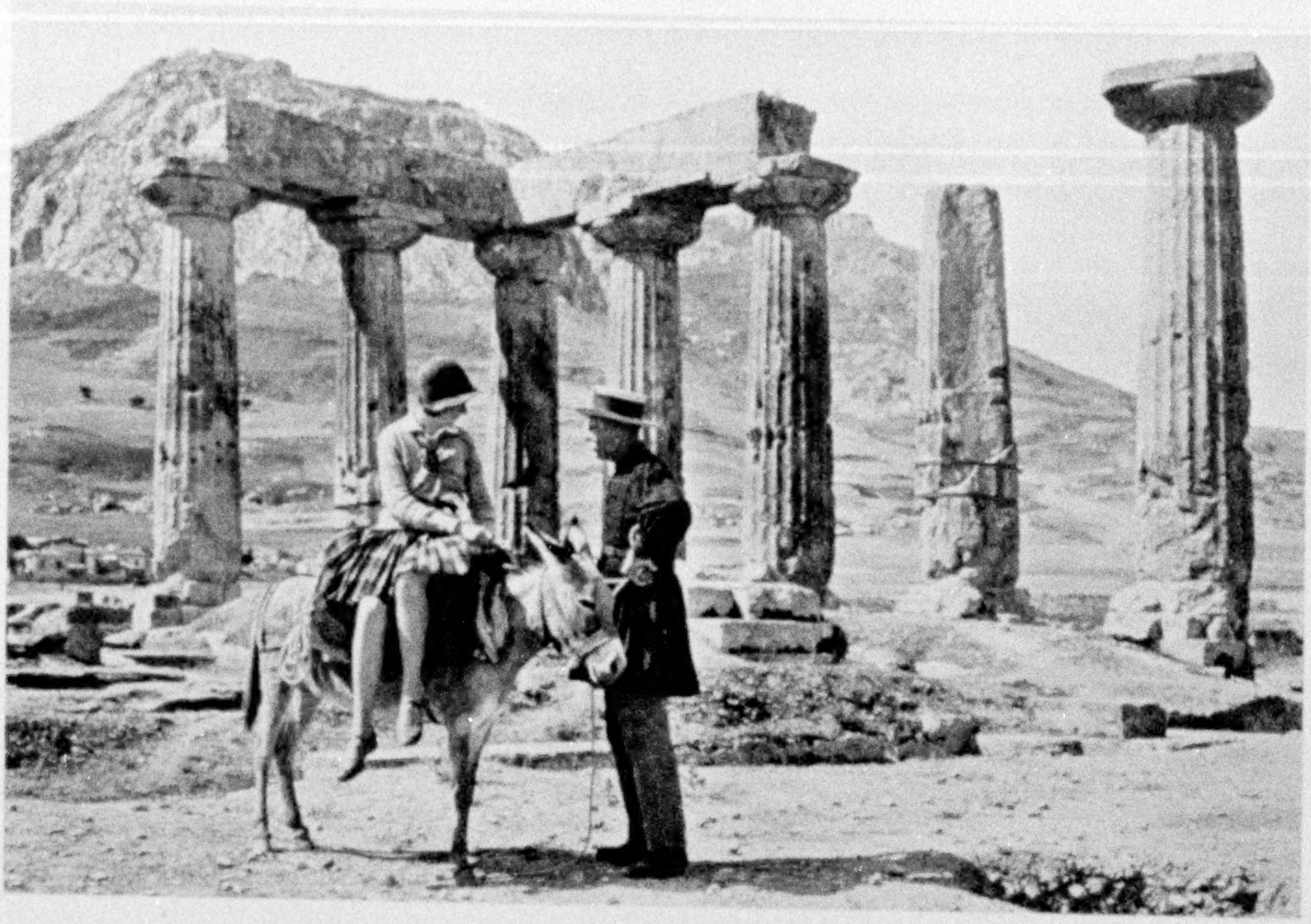
WHERE PRE-HELLENIC CIVILIZATIONS WERE UNEARTHED

From Arcadia we coasted down to a historic plain, the Argolid, where the spade of Schliemann proved mightier than



A FORTRESS BUILT BY BITTER ENEMIES

The Palamidi Hill, overlooking Nauplia (see Color Plate VI), was alternately held by the Venetians and Turks, each of whom strengthened the fortifications, units of which, named after Themistocles, Miltiades, Achilles, Epaminondas, Leonidas, and other Greek military heroes, are now deserted. The modern town of Nauplia extends along the quay.



RUINS OF THE TEMPLE OF APOLLO AT CORINTH

The stucco is gone, but seven porous limestone columns have withstood earthquakes for 2,500 years. On the 1,800-foot hill in the background are the medieval battlements of Acro-Corinth.

Homer's verse. Even the erudite have not sifted all the evidence, but this tiny plain once swung a mighty scepter. Here a civilization of Minoan sea-rovers took root on Hellenic soil.

Stand on the low ridge of strong-walled Tiryns, whose bright frescoes and sewered bathroom date back three thousand years. Nauplia, site of man's first lighthouse, is only three miles away. Warlike Argos is almost as near. Back in the hills was the health resort of Epidauros, ancestor of Aix les Bains and White Sulphur Springs, its main ruin an almost-too-perfect theater. Mycenæ, whose heraldic lions form a clue to the origin of Greek architecture, is close at hand. In this crowded plain, Tyrian buccaneers, after peddling their wares, abducted the local Helens and gave pre-Homeric poets their themes (see illustrations, pages 676 and 677).

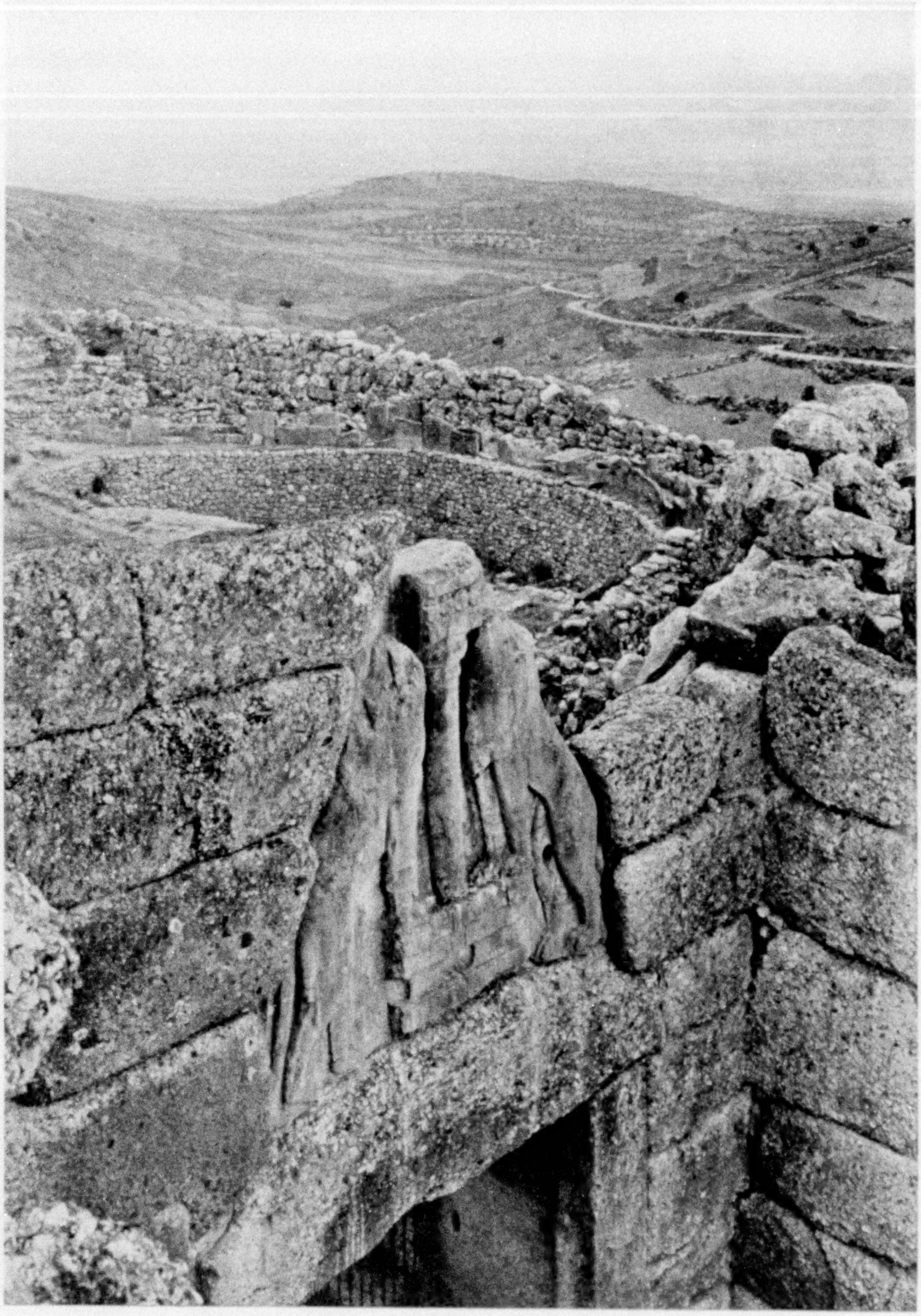
A RACE-QUAKE FLOODED ATHENS WITH REFUGEES

From the prehistory of the plain of Argos to the standardized refugee homes of Macedonia is a long but necessary jump.

In Athens and the Piræus thousands of Ottoman Greek refugees still live in squalid hovels, from which their daughters, dressed with unquestionable chic, emerge like butterflies. When the flood of refugees landed in Greece,* barracks, tents, railway cars, even the prayer-niches of mosques and the loges of theaters, were crowded with homeless immigrants. A race-quake had done what only earthquakes often do. But in Macedonia and Thrace, plain but relatively well-built suburbs have already almost swallowed up slovenly old towns.

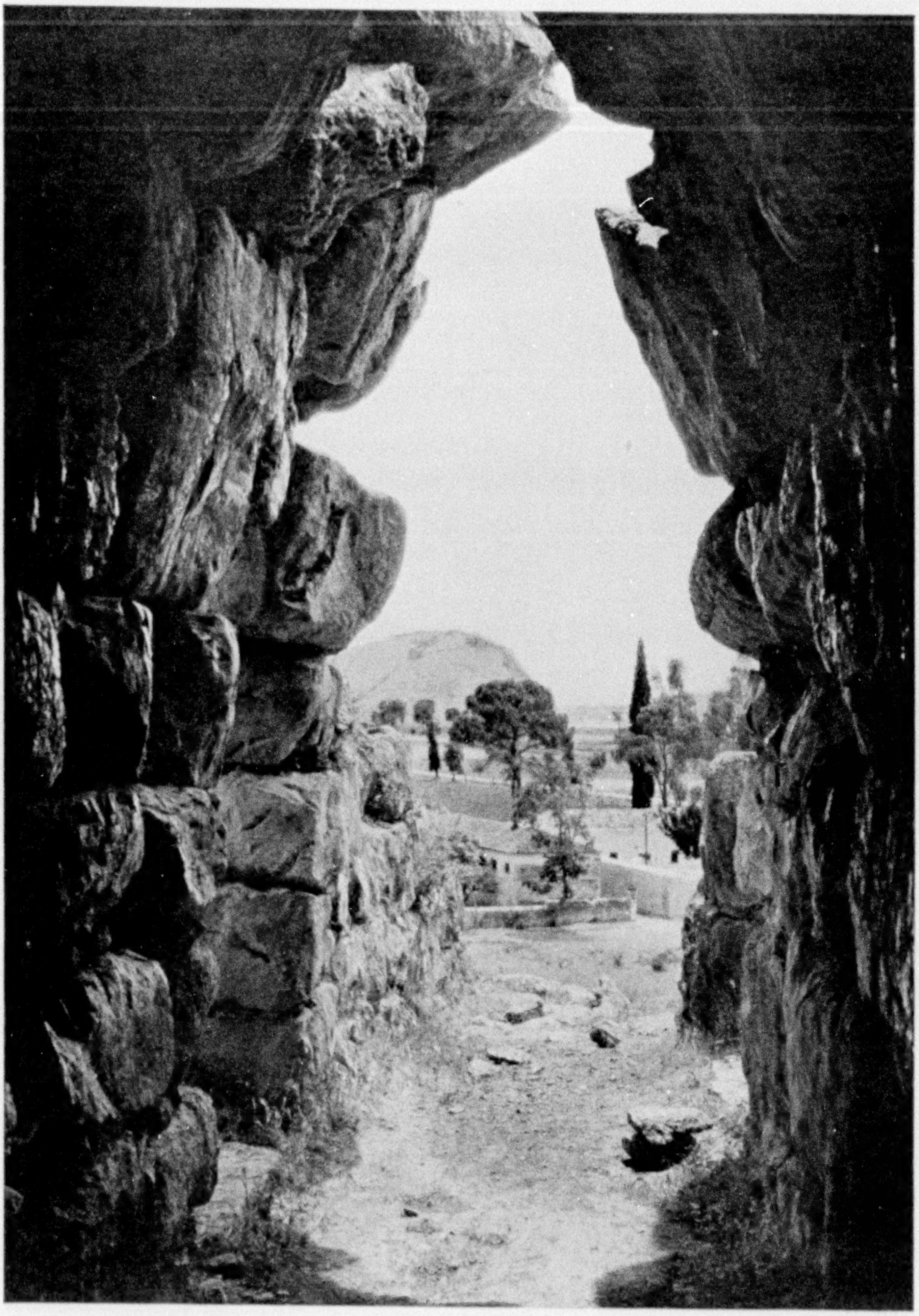
To see what the modern refugees are doing, one starts from Salonika, which is being rebuilt according to a prearranged plan. Disastrous fires cleared the way for progress, but almost completely destroyed the church of St. Demetrius, fifth-century gem of Byzantine art.

* See "History's Greatest Trek: Tragedy Stalks Through the Near East as Greece and Turkey Exchange Two Millions of Their People," by Melville Chater, in the NATIONAL GEOGRAPHIC MAGAZINE for November, 1925.



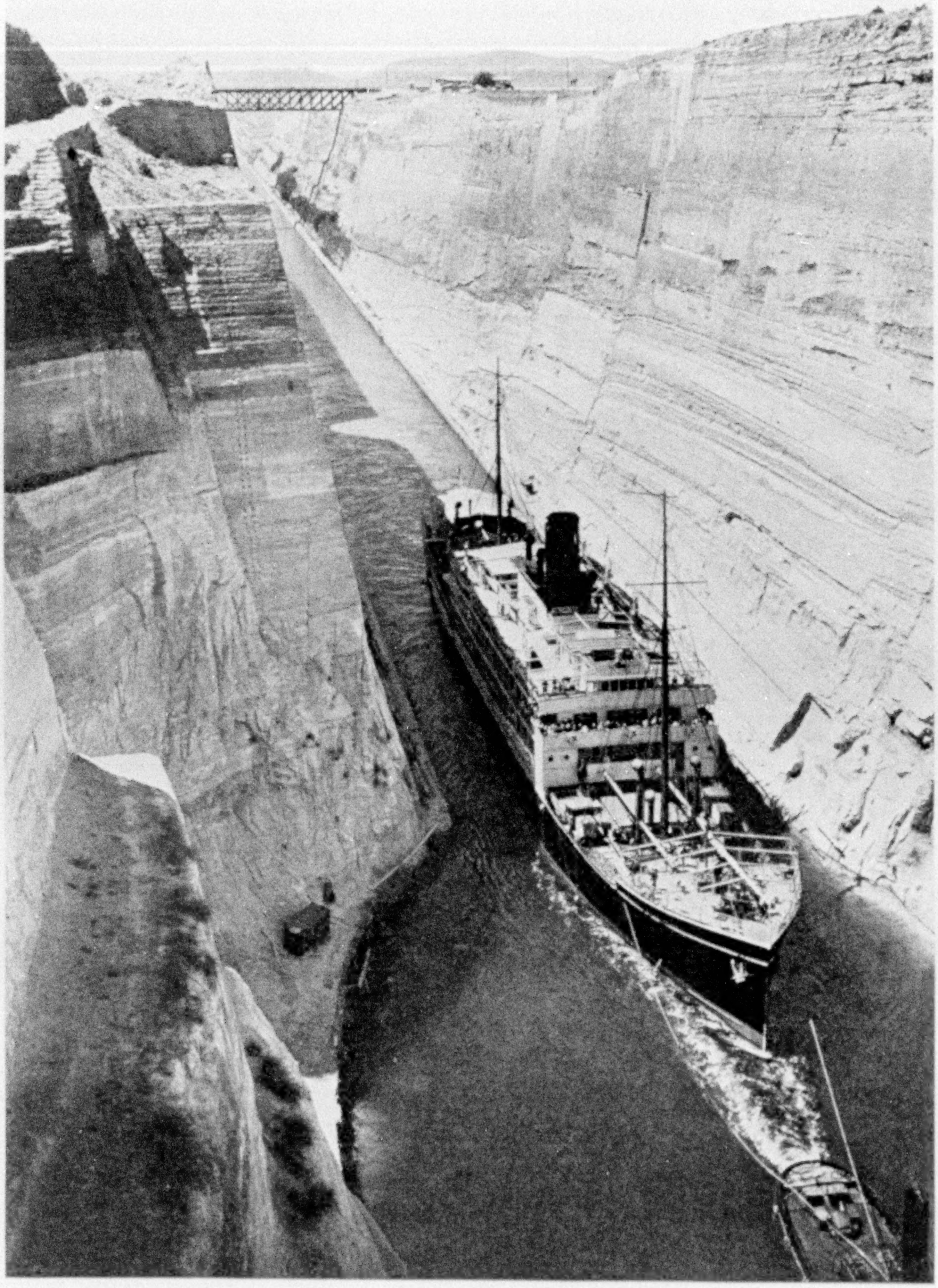
THE GATE OF THE LIONS AND THE GRAVE CIRCLE AT MYCENÆ

The heraldic bas-relief, related to Phrygian rock tombs and Cretan architecture, is an important link in ancient art. In one of the six shaft tombs of the grave circle within the walls Dr. Schliemann, the noted archeologist, in 1876, found the bodies of five persons "literally smothered in jewels." In the distance is the Argolid, or plain of Argos, surrounded by pre-Hellenic ruins.



A CYCLOPEAN GALLERY AT TIRYNS

Pausanias wondered at this megalithic structure, "each stone so large that a pair of mules could not even stir the smallest of them." In 1884 Dr. Schliemann, excavating the prehistoric palace supported by these galleries, began to match actual discoveries with Homeric phrases. Now the Mycenæan Age, dating from the sixteenth to the twelfth century B. C., is better known than Pausanias knew it in 170 A. D. In the distance is the Palamidi (see page 674).



SHORT CUT FROM THE ADRIATIC TO THE ÆGEAN: THE CORINTH CANAL

The construction of this four-mile waterway was planned by the Romans, begun by the French, and completed in 1893 by the Greeks. Ships using it shorten their run between Kephallenia and the Piræus from 366 to 164 miles. The canal is 70 feet wide and has a depth of 26 feet, but its current is at times dangerously swift.

A splendid civic center is to divide the new city into business and residential regions. The free zone is becoming an important port for Jugoslavia and the Balkans. An American firm is draining the Vardar swamps and antimalarial campaigns have revolutionized the health situation. Trade and banking, once carried on by descendants of Spanish Jews expelled by Ferdinand and Isabella, are being fostered by Greeks from Smyrna and Constantinople. One can get an ice-cream soda at the "California," kept by a Greek-American who returned to look after his mother, but who makes enough money there and enjoys life so well that he has decided to stay.

This city, where St. Paul preached to the Thessalonians, presents a fine façade on the gulf, and the new seaside promenade is crowded at the twilight hour. At the base of the White Tower—Venetian battlement, Turkish prison, and Boy Scout headquarters—people pose for the best made-while-you-wait photographers in the Near East, most of whom speak Turkish.

BY MOTOR THROUGH MACEDONIA

Here I rented a flivver and toured to the Turkish and Albanian frontiers. The roads were execrable, but an ambitious good-roads movement is now well under way.

From Salonika to Serrai one may already go by motor much faster than by train, but we followed the roundabout railway line to Doiran, where a British war cemetery overlooks a lake shared by Greece and Jugoslavia. Men and women were baiting long lines of hooks ready for the night's fishing. From there a mere trail parallels the northern frontier. At twilight we were halted by exotic gypsy music.

We left the rocky road to the Bulgarian capital behind us and rumbled past the hill battlements of Siderokastro and south to Serrai. There the regular motor service has its terminus in front of a dehorned mosque, its prayer niche covered by a silver sheet and posters of cinema stars resting against walls where solemn Moslems used to sit. Although camels still stalk in, laden with bulging loads of charcoal, and peasants drive their slow-footed oxen through the bazaar, Serrai is *nouveau riche*. New refugee houses cluster round the older town. Drainage operations between here and the sea will add thousands of acres of arable land to the "Golden Plain," and the obstreperous river is being tamed.

Between Serrai and Drama the road is so pock-marked that in dry seasons the autos flee it as one would the smallpox. After a heavy rain the ever-changing trails become bottomless bogs. Like Serrai, Drama is rapidly expanding and the main tobacco highway leads from this point on the railway to the port of Kavalla.

The road to Kavalla rounds a hill overlooking the site of Philippi, once fortified by Philip II of Macedon as a protection for the near-by gold mines. This home of the Philippians looms larger in the New Testament than on the map, but a few massive ruins still break the skyline.

KAVALLA, THE CHIEF TOBACCO PORT

Kavalla, as seen at night, reminds me of Corsica's Bonifacio, another high-reaching town almost surrounded by the sea and culminating in a mysterious fortress. It is joined to the mainland by a towering aqueduct, under whose arches hucksters peddle bright fruits and vegetables by the light of flickering torches, their ruddy flames repeated in displays of hand-hammered copper.

Between Kavalla and Xanthi one passes through the best tobacco land in all Greece. Those who picture wide-spreading fields full of waist-high plants would be disappointed. Not quantity but quality is the aim, for other regions produce larger crops. Beside the swift-flowing Nestos River sparse fields are tucked into the folds of the rocky hills. Here the conditions of soil and sun are such that the tobacco is the best of its kind. The choicest is usually bought by Americans, with Continental buyers competing for the second-grade leaf; but in 1929 the top price was paid by a Greek cigarette maker of Xanthi, in whose factory I saw attractive Christmas boxes of all-oriental cigarettes being prepared at $2.00 a hundred.

Of this amount more than half goes directly to the Greek Government, an eighth goes to the retailer, and approximately

CRADLE, HAMMOCK, AND CARRYALL ON A PELOPONNESIAN HIGHWAY

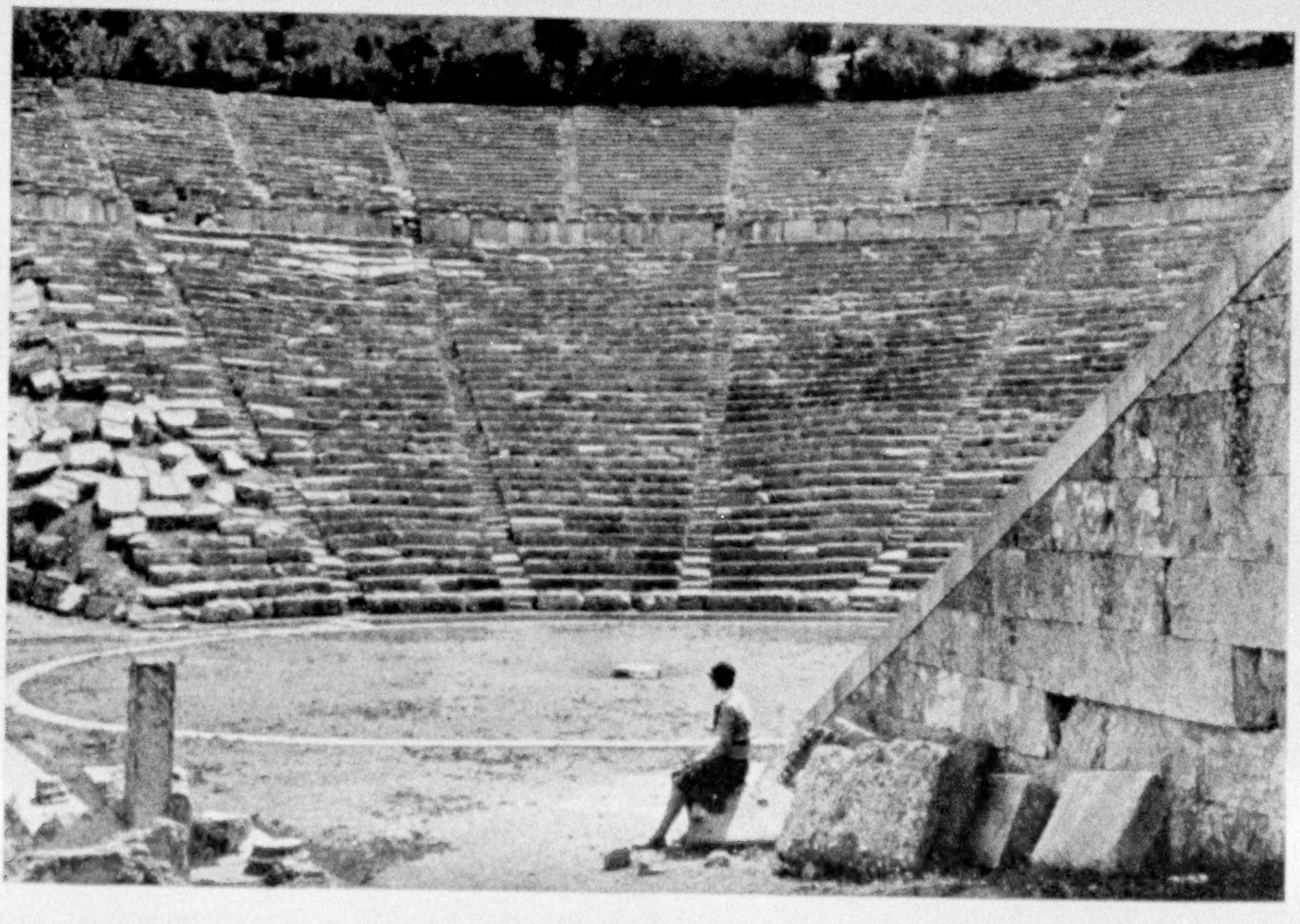
Swung from the shoulder or hung on a bough or a wall peg, this cradle may also be used for gathering firewood or herbs before the homeward tramp ends the day afield.

ISLAND, PLAIN, AND MOUNTAIN FURNISHED THESE COSTUMES FOR ATHENIAN MAIDS

Society girls are sitting in the seats of the mighty in the Theater of Dionysus, the cradle of classic drama (see, also, page 662). They wear the costumes of Astypalaia, a former Greek island; Gida, in the Macedonian plain, and Ioannina, in the mountains of Epirus.

WHERE MUSES, NYMPHS, AND BACCHANTES DANCED

On Parnassus a townsman of Delphi swings his skirts in a native measure which his colleagues cannot follow.



THE THEATER AT EPIDAUROS WAS DESIGNED TO PROMOTE HEALTH

The best-preserved ruin at the most famous shrine to Æsculapius, God of Medicine, is that of the finest theater in Greece. Every medical officer who wears the serpent-entwined staff pays tribute to this health resort, where diverting drama was an instrument of healing.

THE WINE AND CURRANT PORT OF PATRAS

The entrance to the Gulf of Corinth, a few miles to the northeast, is only one and one-quarter miles wide. Thanks to the Corinth Canal, the quick route to the Piræus and Constantinople passes between northern Greece and the Peloponnesus instead of making the stormy voyage around Cape Matapan.

SPARTA, "WHERE EVERY FIGHTING MAN WAS A BRICK"

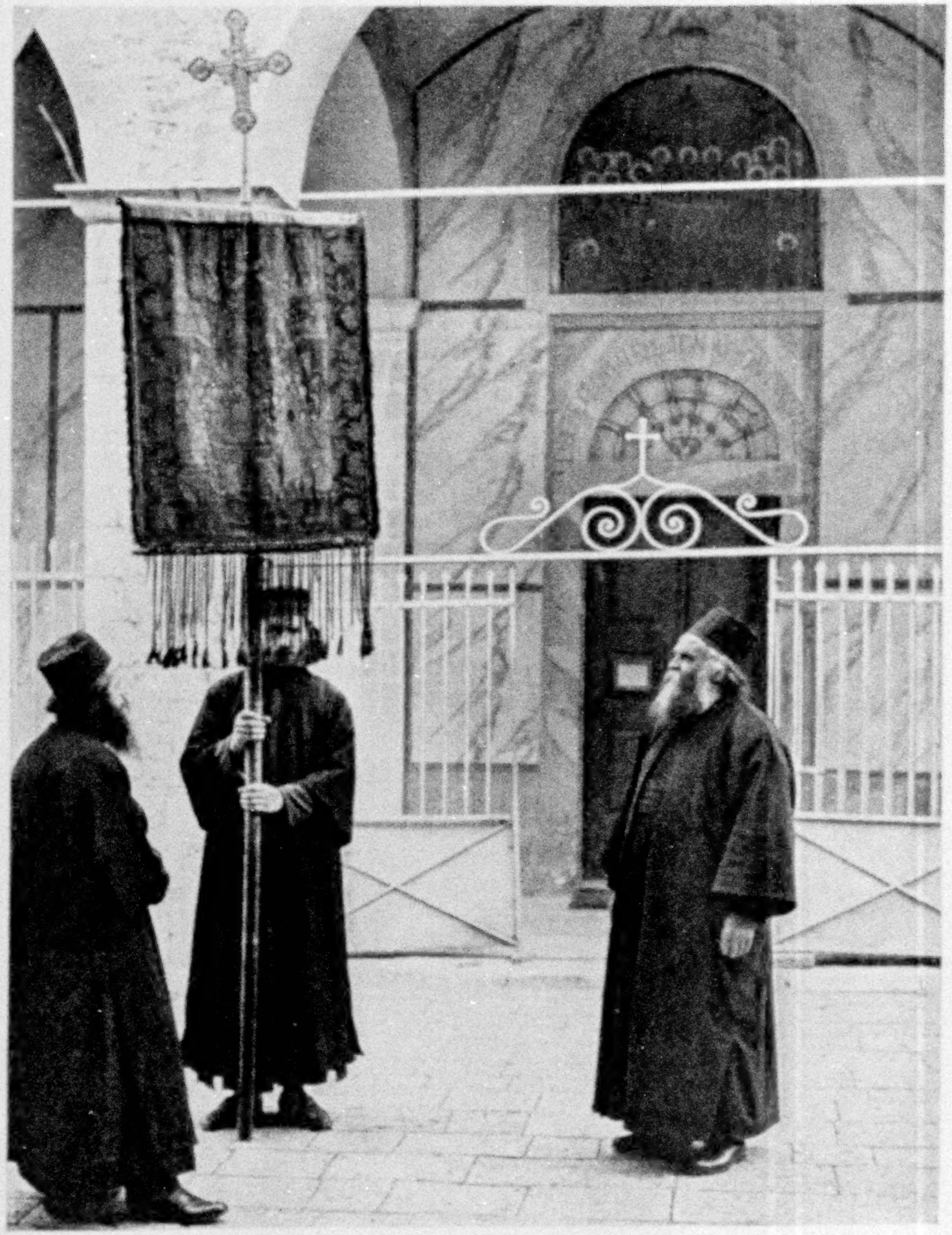
Occupying a magnificent site in the broad plain of the Eurotas, with 8,000-foot Taygetus separating it from the citadel of its enemies at Ithome, Sparta, though relatively lacking in ruins, is well worth a visit. At the base of the foothills of Taygetus are the ruins of Mistra, Græco-Byzantine relics of the Middle Ages.

HAGIA TRIAS IS NOW REACHED BY A ROCK STAIRWAY

Sheep graze atop the rock pillar of the Holy Trinity, to which one could rise, until 1925, only in a net drawn up by a windlass turned by the monks. Now only two or three monks live in this monastery of the sky, and the windlass is used only for raising firewood and other provisions. Visitors climb up the newly built stairway, which, like the rock path to Sigiri, in Ceylon, and to some of the Pontic tomb chambers at Amasia, in Asia Minor, is cut into the rock in such a way as not to be open to attack from above.

BOARDS, NOT BELLS, CALL GREEK MONKS TO PRAYER

Here at Hagia Lavra, as at other Greek monasteries, wooden mallets beating on a sounding board measure monastic time. Bells are used only for feasts and occasions of rejoicing.



THE ORIGINAL STANDARD OF REVOLT FOR INDEPENDENCE

First hoisted by Archbishop Germanos on April 4, 1821, this richly embroidered religious picture became a rallying point in the struggle against the Moslem rulers which ended in 1830 (see text, page 664).

PELOPONNESIAN PEASANTS

In the background looms the once impregnable fortress of Karytæna, recalling the days when swashbuckling Crusaders were princes in Morea.

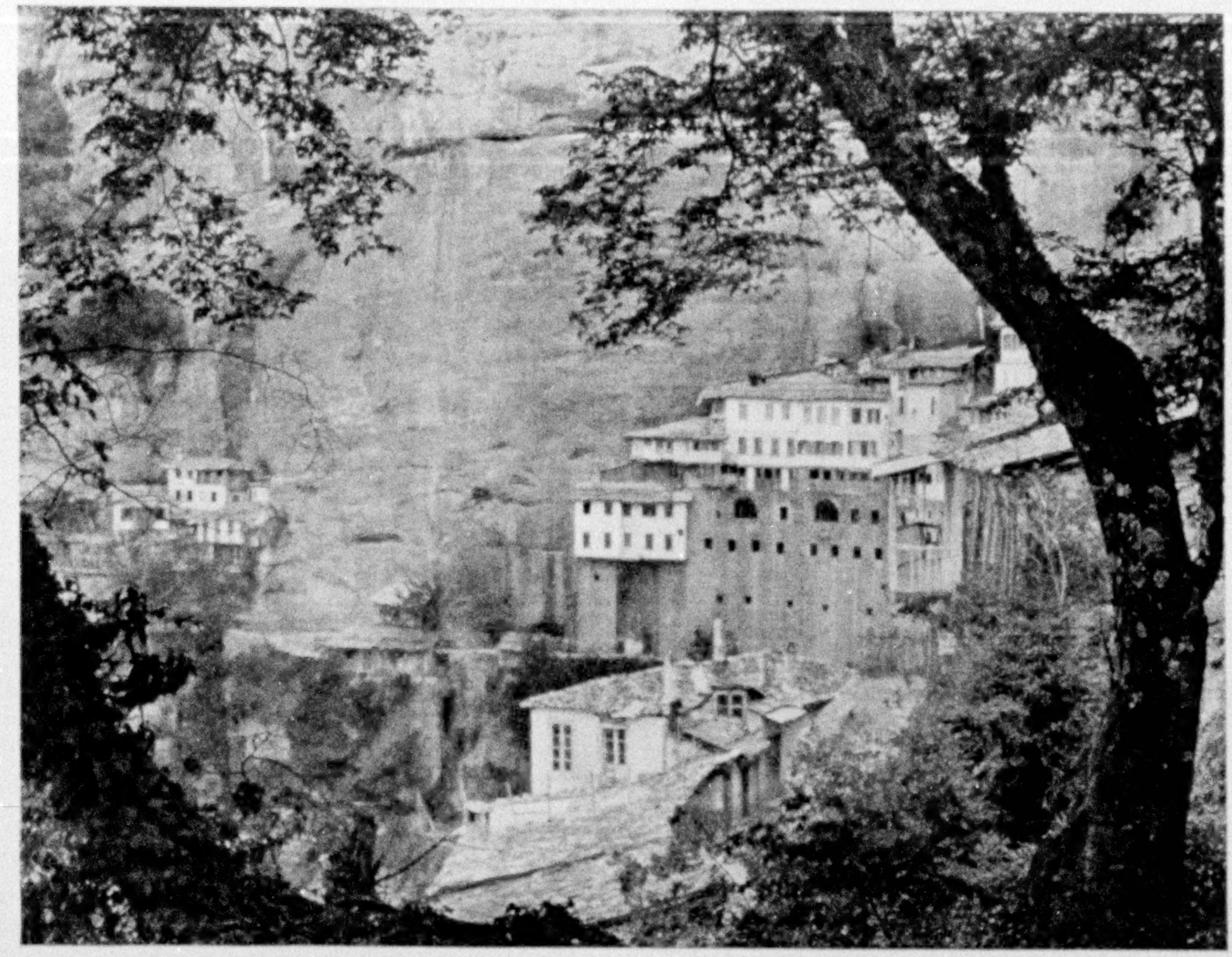
one-third has to pay the entire cost of tobacco, box, advertising, and dividends. Considering the small proportion of the cost which goes into the raw leaf, it is surprising that more of the best Greek tobacco is not imported into the United States. Overproduction already threatens the growers at a time when better roads give promise of better profits.

When an American buys a blended cigarette, half of his money goes to his Government. Advertising takes another slice. Domestic tobacco, tinfoil, packing, and printing must be paid for. The infinitely small amount of skilled labor takes a share, and the tobacco buyer in Macedonia is given a pittance, being constantly reminded that all other charges are fixed. This tiny portion of our tobacco bill is the chief factor in the increasing prosperity of Macedonia and Thrace.

Of the amount paid for tobacco at Kavalla, fully one-half goes for the slow-footed water-buffalo transport which hauls the leaf through the mire of the rainy season to the seaside conditioning factories.

TURBANED TURKS STILL LIVE IN THRACE

From Xanthi eastward one is constantly meeting with unexchanged Moslems. On many a trail one sees old Turks riding tiny donkeys and wearing such turbans and waist scarves as can no longer be seen in Turkey itself. All the way to the Maritza, which greeted us with its annual flood, we passed fezzed, wide-pantalooned workers—of indeterminate racial stock—harvesting Indian corn. An entire section of Komotini is given over to these followers of Mohammed, as sincere in their praise of conditions in this Greek



A FAMOUS MONASTERY CLOSES A VAST CAVERN

By plugging itself into the Great Cave (Mega Spelæon) from which it takes its name, the most important monastery in Greece proper is able to cling like a swallow's nest to the towering cliffs. The five-storied building was erected in 1640. In 1827 the cave retreat successfully withstood the Turkish troops of Ibrahim Pasha. The Orthodox Church was the backbone of the Greek fight for independence, whose success, attained in 1830, is being recognized by the Centenary Celebration of 1930 (see, also, illustration, page 685, and text, page 664).

town as are many Greeks resident among the Turks in Constantinople (see illustration, page 698).

As in other parts of Greece, the sea is not neglected, and at Porto Lagos men were spearing octopuses with the aid of glass-bottomed buckets. A twenty-pound octopus is not a pleasant bathing companion.

IN CAMP WITH THE KUTZO-VLACHS

On the way back to Salonika we passed groups of Kutzo-Vlach shepherds making their annual descent from the frontier mountains to the grassy plains of Khalkidike (see page 708).

Most of the work of making and breaking camp is done by the women, some in bright costumes skillfully embroidered by hand (see Color Plate XIV).

They are always bashful about having their pictures taken, but by calling for the caravan's patriarch and photographing the drones first, it was easy to obtain pictures of the workers. These pastoral nomads so interested me that when one long caravan turned aside to a grassy slope overlooking the Serrai plain, I braved their wolflike dogs and helped the surprised women make camp.

The flocks, herded by the sturdier men, precede or follow the impedimenta, but each caravan is well provided with chickens, which ride across the country swaying back and forth on the backs of the ponies. Vlach babies, last to be loaded and first to the ground, ride before they can walk. Arrived at the carefully chosen site, the women skillfully pitch camp. So industrious are they that even as they plod along in the caravans they are invariably knitting.

Back of the range of hills behind Salonika, Sundays and feast days bring out bright costumes of heavy, elaborately embroidered wool. It had taken my chauffeur a long time to understand why a man should travel over the bumpy roads of Macedonia in order to photograph obsolescent costumes. When he promised me that his mother-in-law in Aivat would be a good model, I pictured some garish modern monstrosity worn by a wrinkled granny worthy of more appropriate dress; but both she and her fine old costume proved worthy of a painter's brush (see Color Plate XII).

Continuing to Derminklava, we encountered two perfect old ladies in such festive mood and dress as make photography a simple matter. As I reached for my tripod, I could almost see their pictures in print, but their motor car was champing to be off for a wedding in the metropolis. They had almost invited my camera as an impromptu wedding guest when it developed that there would be a bridal reception in Derminklava itself.

A WHITE-SATIN BRIDE AT A CRIMSON-WOOL PARTY

For an hour before the arrival of the white-satin bride, the narrow streets of the village were streaked with guests scurrying from house to house, assembling barbaric jewelry to complete their bright costumes. Then came, like a Minoan procession or an Egyptian tomb relief, the bearers of food and drink. Each good housewife arrived bearing on her head or in her arms a huge pot of pilaf or stew, covered by a round, flat loaf like a millstone. Each shame-faced and bashful husband bore a pitcher of wine and a small saucer of bonbons.

Being a guest at such a feast is a formidable responsibility; for, although the families sit together and for the most part confine themselves to the food which they have brought, the stranger must do justice to each festal dish. To a non-drinker the heady wine presented difficulties. Out of the corner of my eye I saw a capable thumb course the inner rim of a capacious tumbler into which was poured a deadly draught of deep-red wine. Many half-pint toasts like that from the transparent glass would inevitably lead to the floor. By following the custom of raising an opaque pitcher to my lips, however, it was possible to do honor to all without becoming a public nuisance.

THE HIGHLAND LAKES OF NORTHERN GREECE

We journeyed through the rejuvenated kingdom of Philip and Alexander to the Albanian frontier. Far above the level of the sea are lakes which, if harnessed or utilized for irrigation, might add as much to the wealth of Hellas as they now do to its beauty. Most charming of these lakes, so unexpected after the sun-baked landscapes of Attica, is that which almost surrounds the town of Kastoria with its half-buried Byzantine chapels.

Along the shores of the lake, upon whose waters the fishermen row the most ungainly of barges, are great houses with barred windows and fortlike walls which give an impression of hidden wealth. The vestibules are models of neatness. Instead of whitewashing the entire entrance, as do the women of Monemvasia, only the crooked cracks between the blue flagstones are whitened.

At Florina, Gargantuan bouquets of color hanging at shop doors were actually shaggy blankets colored bright green, red, and orange. Beside a muddy stream, barelegged country girls were scooping up clear water from extemporized pools (see Color Plate VI).

On the way to Vodena we were constantly disputing the highway with great flocks of sheep on their way down from the hills. As Edessa, capital of Macedonia, it commanded the Via Egnatia from Dyrrachium (now Durrës) to Byzantium. In this age of hydraulic development it is a center for water power, as there is a sharp break of several hundred feet from plateau to coastal plain.

As we returned toward the Thessalonian archway of Galerius, women were doing their laundry beside a pool still known as the "Baths of Alexander," and the roofs and eaves of one Macedonian village after another shone with the bright gold of drying maize.

Volos has its Jason Street and an engine of its steam tramway is the "Argo," but its spirit is modern. A new bund is crowded with easy chairs and the bright

© National Geographic Society — Natural-Color Photograph by Maynard Owen Williams

LEGEND MAKES ALEXANDER THE GREAT A DESIGNER OF MILLINERY

So much more brave than their men-folk were the women of Gida, Macedonia, that Alexander fashioned for them this head-dress, resembling the helmet of his warriors, which at once honored the women and shamed the men.

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Natural-Color Photograph by Maynard Owen Williams

GREGORIOU, ONE OF THE TWENTY MONASTERIES OF MOUNT ATHOS

Amid the sun-baked landscapes fringing the Aegean, the Athonite peninsula is remarkable for its wooded slopes and colorful monastic retreats from the outer world (see also Color Plates XII and XIII).

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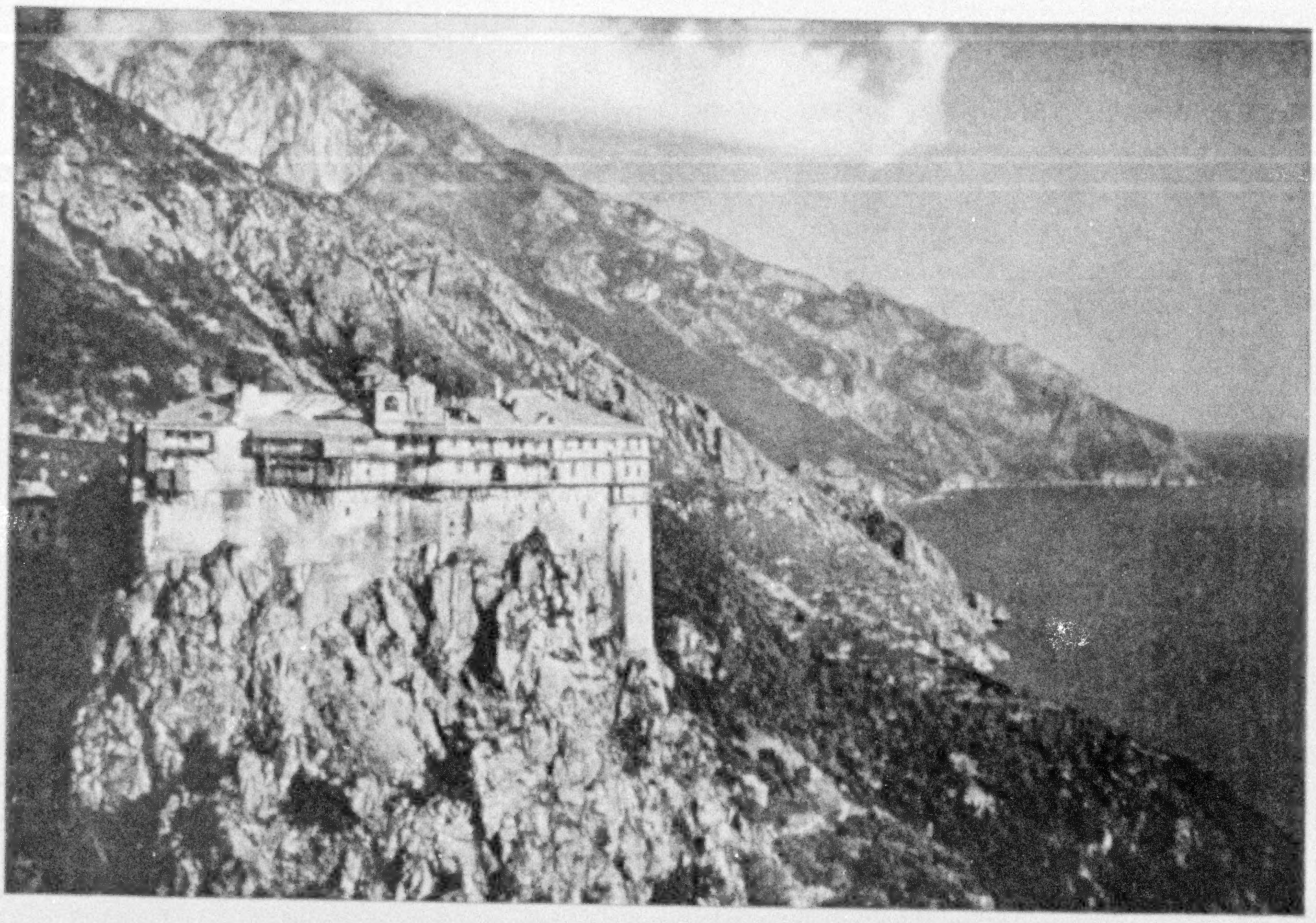
A BRIGHT COSTUME OF REUNITED GREECE

The outdoor oven in the style of the island of Skyros—Rupert Brooke's "bit of England"—is part of a charming summer home near Athens.

Natural-Color Photographs by Maynard Owen Williams

IN THE RESPLENDENT UNIFORM OF THE ROYAL GUARDS

At the time of Otto, first monarch of New Greece, this dress was worn by the royal retinue. The Presidential Guard wears a similar uniform to-day.



A MONASTIC SKY-SCRAPER ON THE SLOPE OF ATHOS

When viewed from below, Simopetra, with its seven stories of rooms perched high on a cliff, resembles a modernistic office building.

© National Geographic Society Natural-Color Photograph by Maynard Owen Williams

A BIT OF LOCAL COLOR WHICH IS FADING AWAY

Relatives of the author's chauffeur are here wearing the holiday dress which still survives in Aivat, not far from Salonika, city of the Thessalonians.

THE TIP OF MOUNT ATHOS BEHIND IVIRON

A wonder-working icon, whose copy long occupied the Chapel of the Iberian Virgin in Moscow, is the chief treasure of this rich monastery, built in the tenth century.

© National Geographic Society Natural-Color Photographs by Maynard Owen Williams

ALBANIAN STYLES ADD VIVIDNESS TO MEGARA'S EASTER DANCE

Megara, where Vergil contracted the fever that led to his death, once had colonies in Sicily and on the Black Sea.

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AN ATHONITE ARTIST PERPETUATES TRADITIONS CENTURIES OLD

Greek iconography dates back to the time of the Byzantines, but the carved border of this painting of Saint Nicholas is evidence of changing tastes.

Natural-Color Photographs by Maynard Owen Williams

A KUTZO-VLACH OUTSIDE THE TENT SHE HAS JUST SET UP

Her tribe summers in the northern mountains and winters in the plains. Its herds have a large place in the economy of mountainous Greece.

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HOSTESSES OF THE GEOGRAPHIC REPRESENTATIVE

During the Festival of 1930, when visitors from far and wide crowded Delphi, the author was delightfully entertained in the home of these peasant women.

Natural-Color Photographs by Maynard Owen Williams

A FESTAL COSTUME IN A SUBURB OF ATHENS

From the private collection of its wearer is this dress of Astypalaia, one of the Dodecanese. The "Twelve Islands," now fourteen, were acquired by Italy in 1912.

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A WORKADAY BACKGROUND FOR EPIROTE FINERY

Just outside an exhibit of native handicrafts at Delphi, the rich costume of Epirus is seen beside such outdoor ovens as are common around Mount Parnassus.

posters of three cinemas. Beyond a bathing beach a blatant advertisement is more conspicuous than some of the famous "Twenty-four Villages" of Pelion. New harbor works are in progress. In the restaurant, fish are brought to the patron still flopping, so that one judges his sea food by its agility. He can sit in the new hotel at Volos, watch the yachtlike steamers put out for Trikeri, whose costume is famous (see Color Plates I and III), and consider himself up to date.

After the leisurely train ride to Kalabaka, he is in another world. Old travelers will ascribe this to the monasteries of the sky, to which a visitor, in times gone by, was dragged up in a net; where yellow candles glow before the medieval iconostasis and frescoes of the Byzantine school cover the walls. But I found the town of Kalabaka more impressively out of date than the medieval monasteries. A month on Mount Athos had made the Middle Ages seem quite familiar. But the backwardness of Kalabaka was a distinct, and unpleasant, surprise.

I tramped for a mile through a driving rain to a hotel. Cobblestones and gasoline tins came hurtling down a street in which I waded over my shoes. Returned Americans have modernized the Peloponnesus. The Refugee Commission has rejuvenated Macedonia and Thrace. But Kalabaka is just unregenerate Greece.

IN THESSALY WHOLE MONASTERIES STILL PLAY STYLITE

After what should have been a sleepless night I awoke to find my nose almost grazing a thousand-foot cliff whose top was lost in the mist. Cloud banks spread beauty over Mount Pindus. Let the muddy coffee which constitutes breakfast go hang! Up I climbed to Hagios Stephanos, Hagia Trias, Hagios Barlaam, and Meteoron. In other parts of the world, long before tree- and flagstaff-sitting became popular, there were pillar monks, or stylites. At Meteora not individuals but whole establishments are posed on stone pillars. The use of nets as passenger elevators is now forbidden. Only provisions and firewood are lifted by monk-power. Ladders, still shaking in the wind, are about to fall. But the monks are not prisoners. Rock stairways have been built. In the nets formerly one enjoyed ease and a thrill; on the stairways there is neither.

To describe these stylite monasteries is impossible; nor shall I prove it. As with other unusual sites for which the conventional world furnishes scant comparisons, a picture speaks louder than words (see page 684).

OFF FOR PAGEANT AND FESTIVAL

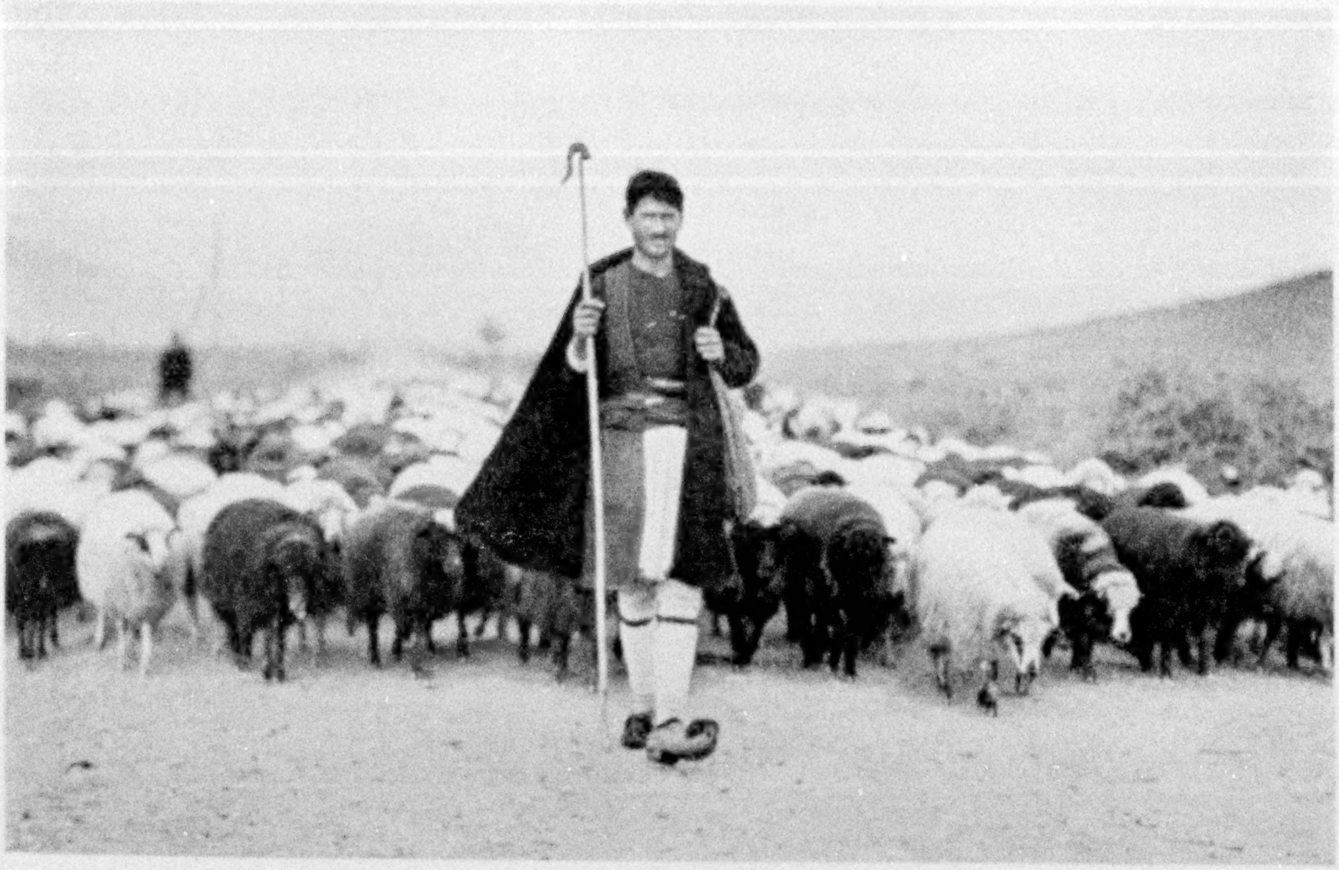
If we are to see the bright pageantry of Hellenic life and costumes, it is high time we board our ship, wait the customary six hours after sailing time while the apples of Thessaly, gray goats, and barrels of Pelion olives are snaked aboard, and return to the city of Athena and the Athenians, through which, like a modern Pausanias, Alexander W. Weddell led our members eight years ago.*

The ancients were amazing men. Imagine attending nine tragedies in a single day, each a drama to give the most sophisticated modern something to chew on! Almost in the heat of battle they built the Erechtheion, a treasure worth defending. In the midst of the greatest war that there had ever been, Aristophanes pleaded for peace, poked fun at officials, condemned profiteers, envisioned friendly intercourse with the implacable foe. In a drama which, with slight changes, is running on Broadway to-day in its 2341st year, he portrayed a woman, Lysistrata, as the "Dismisser of Armies." The Athenian writer of comedies, like the court jester of later days, was privileged to be insolent to his hearers, but the war-time candor of Aristophanes indicates unusual tolerance among his famished audience, worried by a war which hated Sparta won.

CENTURIES JOSTLE ONE ANOTHER IN THE GREEK CAPITAL

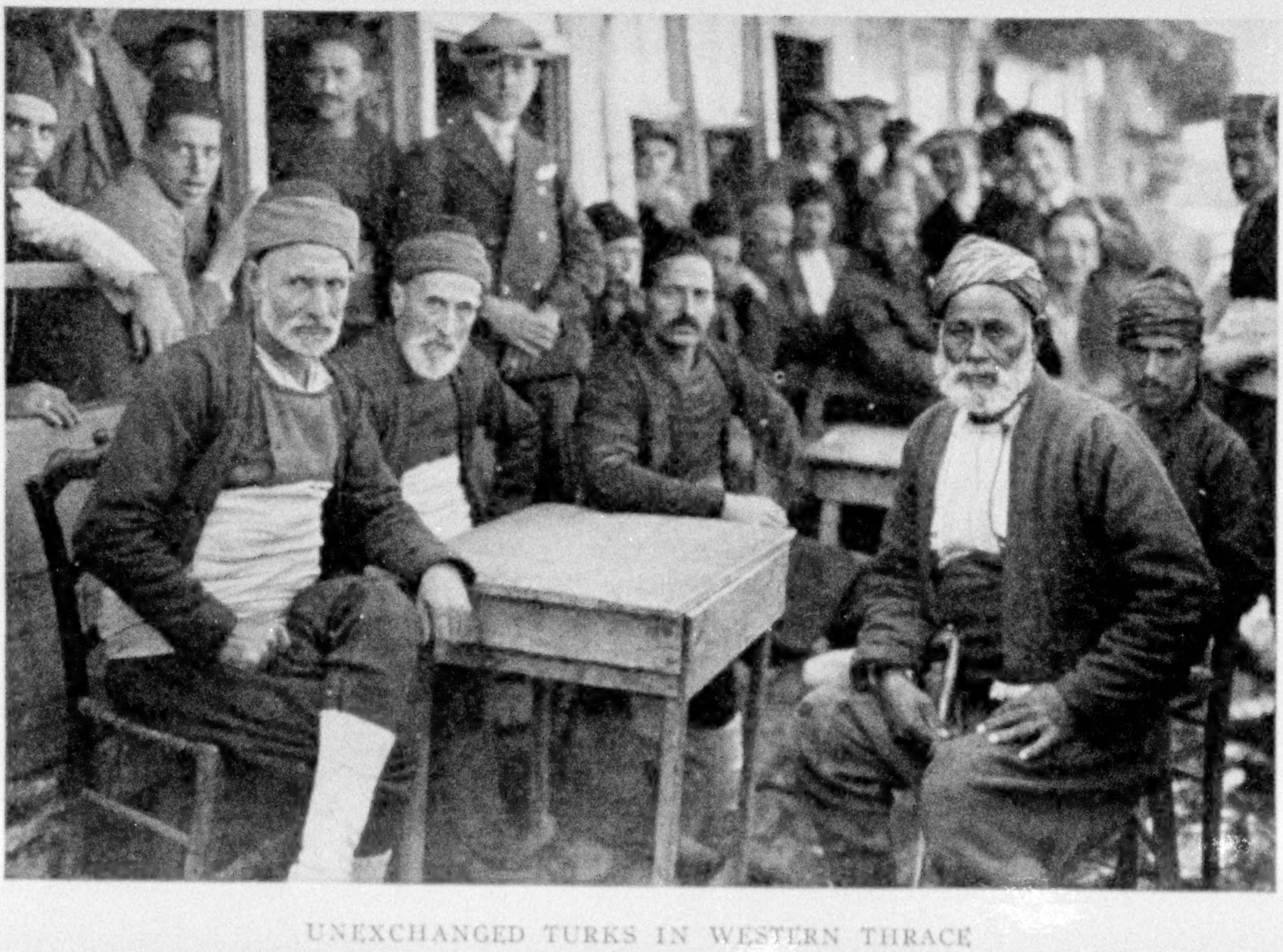
In a brief walk in Athens, one stubs his toes against the centuries. The window-shoppers of Hermes Street are as modern as dull leather and lack-luster silk. Turn a corner and there is a Byzantine chapel in which Theodora would be at home. Roman megalomaniacs worshiped at the Olympieion. And there, on its austere rock, stands the Parthenon. In the birthplace of the drama, the Theater of Dionysus,

* See "The Glory That Was Greece," by Alexander W. Weddell, in the NATIONAL GEOGRAPHIC MAGAZINE for December, 1922.



A MACEDONIAN SHEPHERD RETURNS TO THE PLAINS

Down from the cold northern border mountains strides the shepherd at the head of his flock. Of 15,000 pastoral nomad families in Greece, 6,000 are Sarakatsans, 3,500 Kutzo-Vlachs, 4,500 Greek peasants, and a few Albanians. Refugee farmers are cultivating former pasture lands, but the nomad is still an important factor in the economic life of Greece.

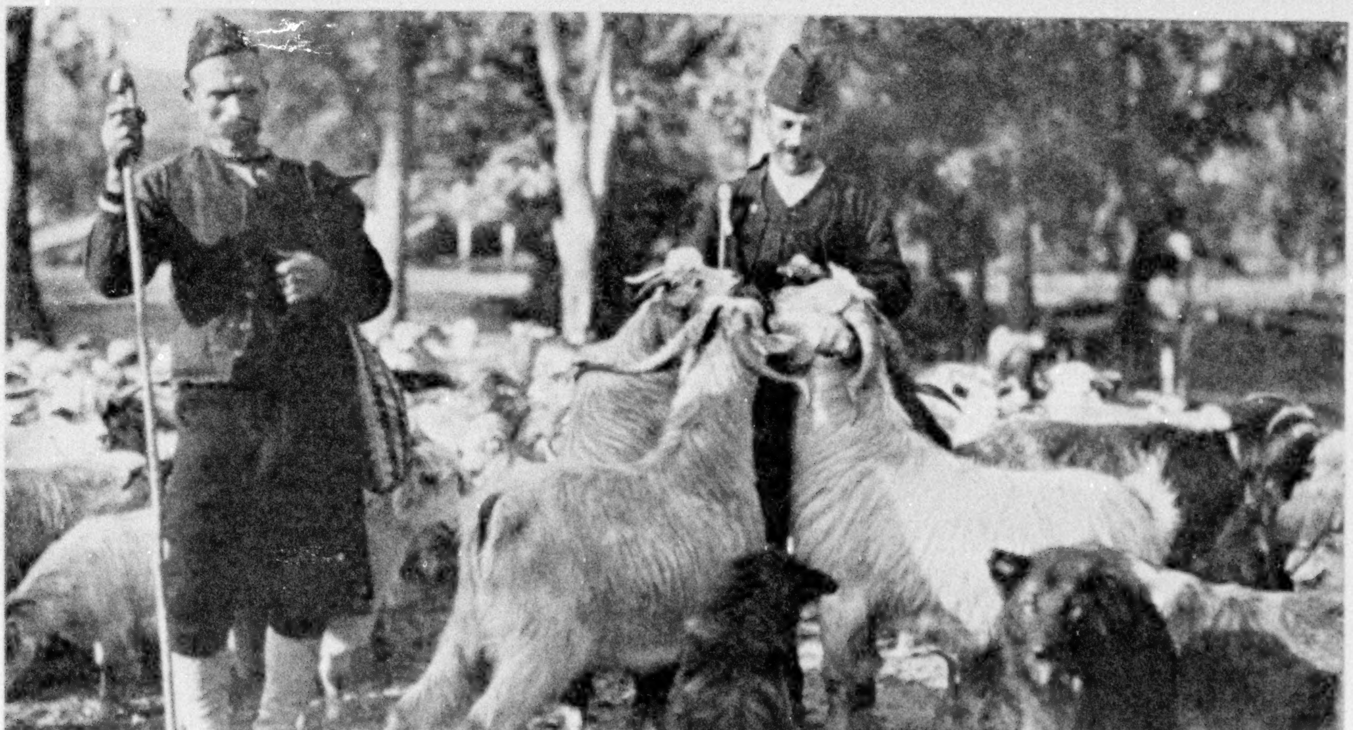


UNEXCHANGED TURKS IN WESTERN THRACE

During the compulsory exchange of Turkish and Greek nationals exceptions were made in the case of Christians resident in Constantinople and Moslems of Western Thrace. These Turks reside in Komotini.

THE ARCH OF GALERIUS CROSSED A FAMOUS ANCIENT HIGHWAY

One of Salonika's busiest streets passes under the arch which formerly marked an important stage on the Via Egnatia from the Adriatic to the Golden Horn. The four rows of bas-reliefs picture the victory of Galerius over Narses, King of Persia, as a result of which the Armenian highlands became a Roman province.



A VLACH SHEPHERD SHARES HIS FOOD WITH HIS FAVORITE BUCKS

The dogs, lionlike in the pasture lands, are tame in the towns. This flock, on its way down from the mountains, has reached the fall line, where water power is being developed at Vodena, formerly Edessa, ancient seat of the Macedonian kings.

A FRESHLY PICKED LEAF OF GREEK CIGARETTE TOBACCO SHOULD BE SO BIG

After the first fall rain, tobacco should not be picked. American buyers are attempting to induce the growers to grade their crop more closely, thus saving labor and wastage from fermented or unsuitable leaves. But, even though faced with overproduction induced by the large number of refugee growers, many planters strive for mass, in which they cannot compete, rather than for a unique quality.

classic dancers still portray the antics of satyrs or declaim the Homeric ode to Apollo. In the Mycenæan room at the Museum, where solid-gold death masks have bent under the weight of time, one can look back into an even more remote past.

The detached pedestal on the left, as one climbs to the Propylæa, once bore a bronze quadriga and mounted figures of Castor and Pollux flanked the approach. In the seventeenth century a minaret rose from the roof of the Parthenon which was later used by the Turks as a powder magazine. After a German artilleryman in the Venetian army caused the explosion which destroyed it, in 1687, a domed mosque squatted within the roofless ruin.

In 1645 a thunderbolt wrecked the Propylæa. The Venetians blew up the Parthenon and the Turks razed the temple of Athena Victory in 1687. No other half century ever saw such destruction as that.

As at the United States Capitol and the White House, the Parthenon entrance was changed. When a temple to Athena the Virgin, it faced the east, on which, as a Christian church, it turned its back. Travelers as well as picture-lovers now think of the western façade as the front. But Phidias's gold-and-ivory figure of Athena Parthenos faced the rising sun.

THE PARTHENON UNDER THE FULL MOON

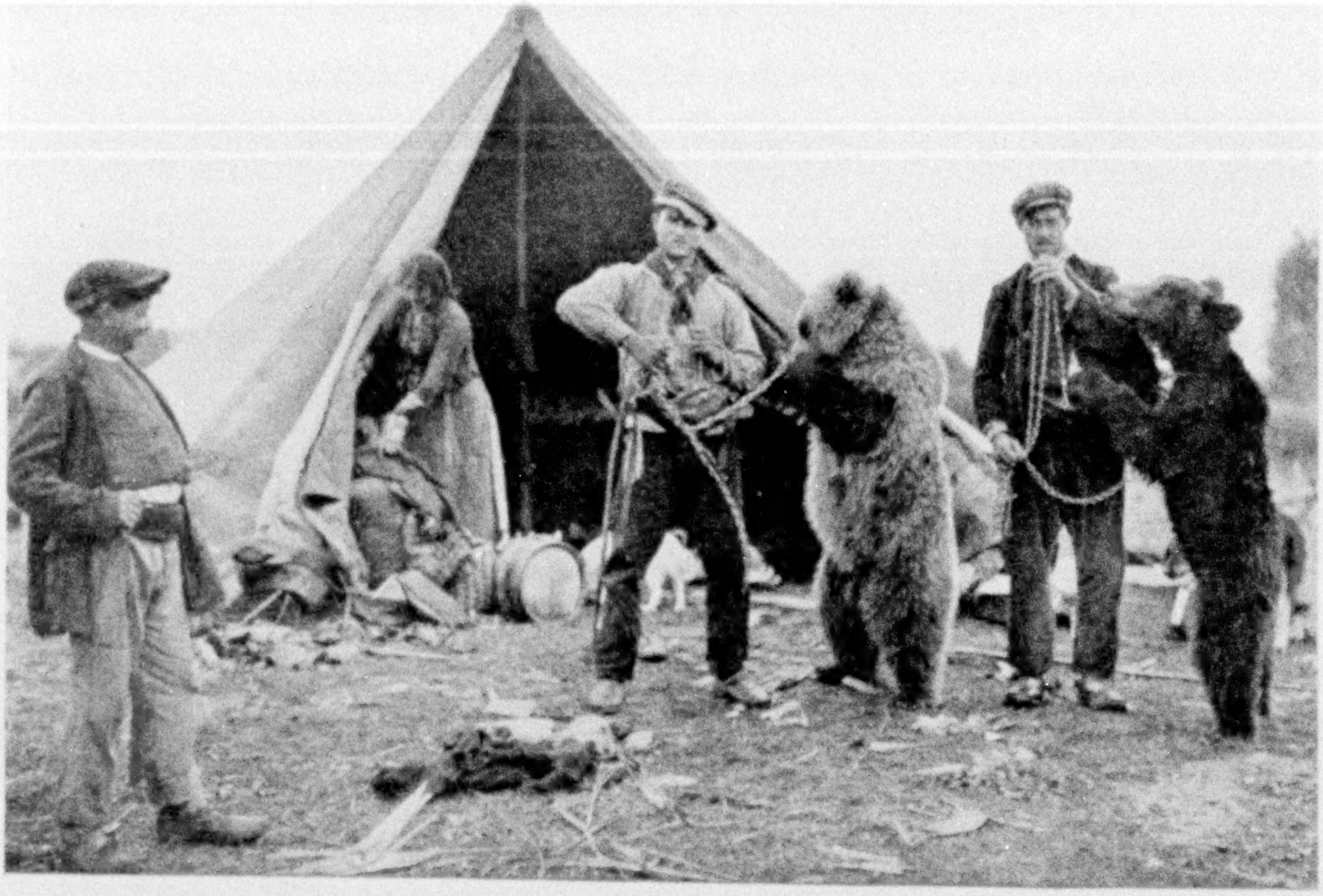
Three nights in each month one may visit the Acropolis by moonlight. The columns, casting aside the golden brown tinge which softens the glare of the sun, welcome the white light of the moon.

Stand in the Propylæa and look at the little Temple of Wingless Victory, so recently rescued from oblivion, while the lights toward the Piræus dance like fireflies in the wide plain.

Rest before the Porch of the Maidens (see Color Plate III) and see those moonlit caryatides breathe with life. Under the high-riding moon, sit on the Acropolis wall above the Theater of Dionysus and

INSPECTING THE BEST CIGARETTE TOBACCO IN GREECE

Picked in August, each leaf is threaded by hand and dried in the open until late winter. It is then carried in a bullock cart to an American warehouse in Xanthi or Kavalla, where the tobacco is re-sorted, graded, and baled in goat hair for shipment to the United States. There are "years" in tobacco as in wine, but so small a percentage of oriental tobacco is used in American blends that the finest crops are not often treasured separately.



GREEK GYPSIES ARE JACKS OF MANY TRADES

Veterinarians and exhibitors of dancing bears fill in their spare time with wood-turning or small blacksmithing jobs.

AN OUTDOOR OVEN IN MACEDONIA

Fired with thorn bush or light brushwood, these outdoor ovens, sometimes shared by several families, are common throughout Greece. Loaves ready for baking are spread on a cloth in the foreground and the oval wooden mixing bowl is in the corner.

A STURDY FISHING BOAT NEAR KAVALLA

Although Greece has a long coastline and the large number of fast days causes a great demand for "meat without blood," the fisheries are not highly developed. Refugee fishermen from Asia Minor are introducing improved methods and equipment.

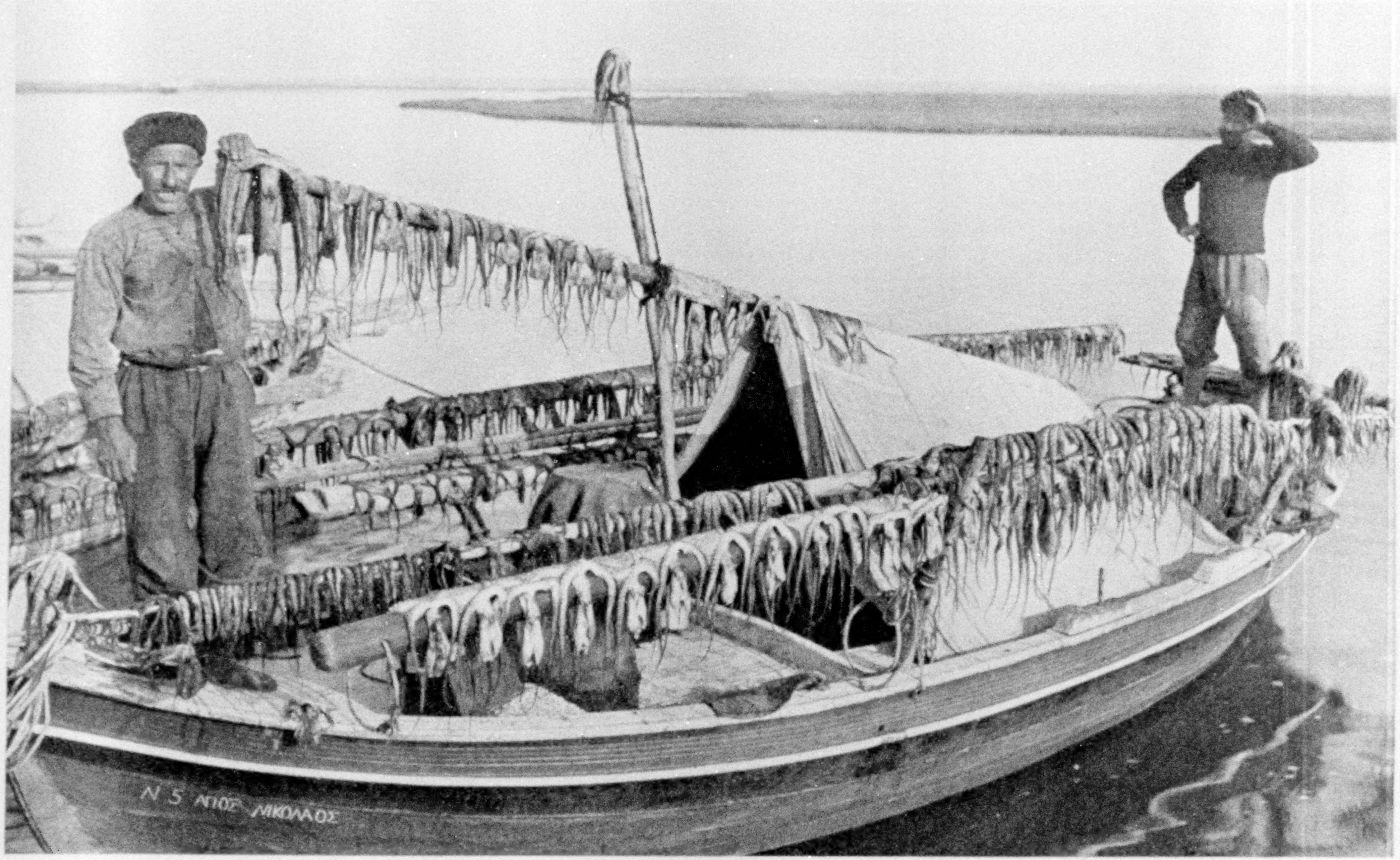
see the supreme glory of all, the south side of the Acropolis with waving willow boughs gently veiling and revealing the beauty of milk-white columns stark against a velvet sky. Silence pervades the spot. The most crass of curiosity-seekers is hushed by majesty. Dinner parties come laughing up the approach of the Acropolis and chatter before the yellow lantern of the ticket-seller; but once in the presence of the Parthenon they fall silent and the dignity of that immortal shrine to the gray-eyed virgin descends on all.

MINIATURE DRAMA IN THE CITY OF SOPHOCLES

One thing the vivacious Greek has never lost—the ability to enjoy himself. Each day brings its comedy. In the music halls topical pieces, unintelligible to the stranger, arouse frequent applause. The arrival of the "talkie," sounding the death knell of moribund drama, caused the girl ushers to blossom forth in bright new costumes, but Athenian life went on unchanged.

In Constitution Square, near the Zappeion, or along the boulevards, a thousand dramatists improvise, ten thousand comedians keep alive such patter as sows smiles. A tiny cup of coffee, a powdery cube of *lokoum,* a liqueur, or an ice, and the stage is set. Actor and audience interchange. People come and go. Orchestras, hidden among the pepper trees, provide a background of soft music. But the real stage is a café table, the real actors prosaic citizens of Athens.

Nothing is ponderous, nothing boisterous. Crowds of pretty girls with bright shoulder scarves over light sport suits



OCTOPUSES DRYING AT PORTO LAGOS, NEAR KOMOTINI

The boundary between Macedonia and Thrace has frequently moved back and forth. At present no fixed political boundary exists. When Kavalla and Porto Lagos flew diverse flags, both were important. Now that both are in Greece, Porto Lagos is waning. But in the shallow estuary leading to an important fishing ground, octopus-spearing thrives. Despite its repellent appearance, the octopus is highly regarded as food.

PERHAPS YOUR CAST-OFF TIRE GIVES ADDED MILEAGE HERE

Travelers in the Near East often come upon the marks of automobile tires on trails too narrow for motor cars. The explanation is that Greece actually imports old tire casings for footwear. These rubber slippers are known as *tsaronkhia.*

GIFT-BEARING GREEKS IN WHOM THERE IS NO GUILE

Visitors to a bridal party at Derminklava bring their own rations. The woman at the left carries a kettle of stew covered with a loaf like a millstone. The older woman contributes a jug of wine. Usually wine and candy are brought by the men.

BUILDING A WINTER HUT BESIDE THE IOANNINA ROAD

Vlach women are so industrious that, after they have broken camp and loaded the horses, and hoisted the chickens into place, and tied the wolf-dog so he won't get himself shot, and put the twins onto the lead horse, and begun their trek to a new camping site, they inevitably take out a sock and do their knitting as they stride along.

A KUTZO-VLACH HEN HAS THE TOURING INSTINCT

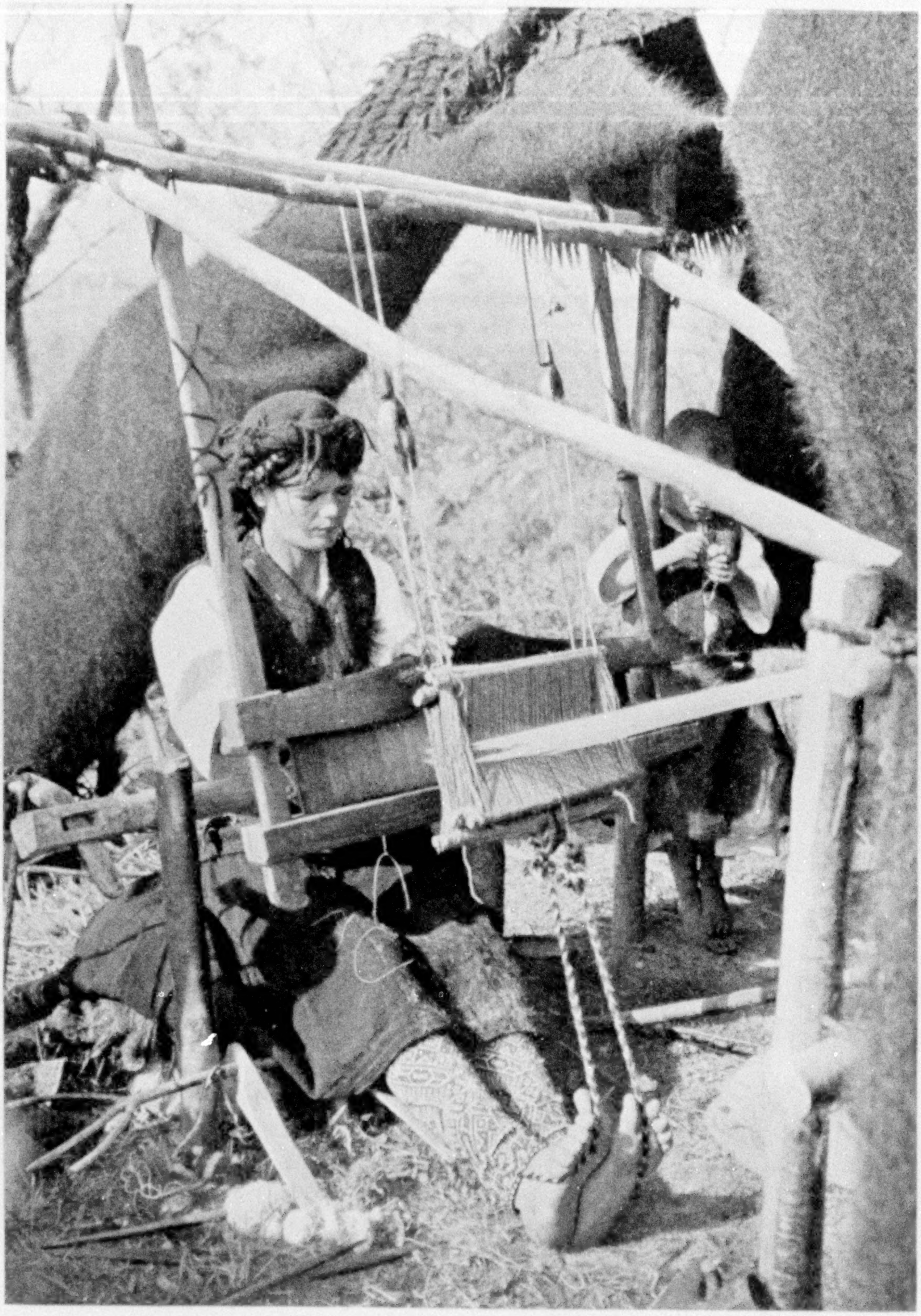
As the nomads travel from one bivouac to another, their chickens ride horseback. While the men drive their flocks to winter pastures in the low-lands, the women carry the baggage and set up homes for their men-folk along the route. The party advances only ten or fifteen miles a day and makes a complete new camp each night.

EVEN PASTORAL NOMADS HAVE INSULATED OVENS

There is no danger of overheating the kitchen, for this portable oven is set up anywhere outdoors. The thick layer of sand on the metal cover prevents the top from cooling off too rapidly. A few twigs heat it, and the flat loaf of bread is well baked and palatable.

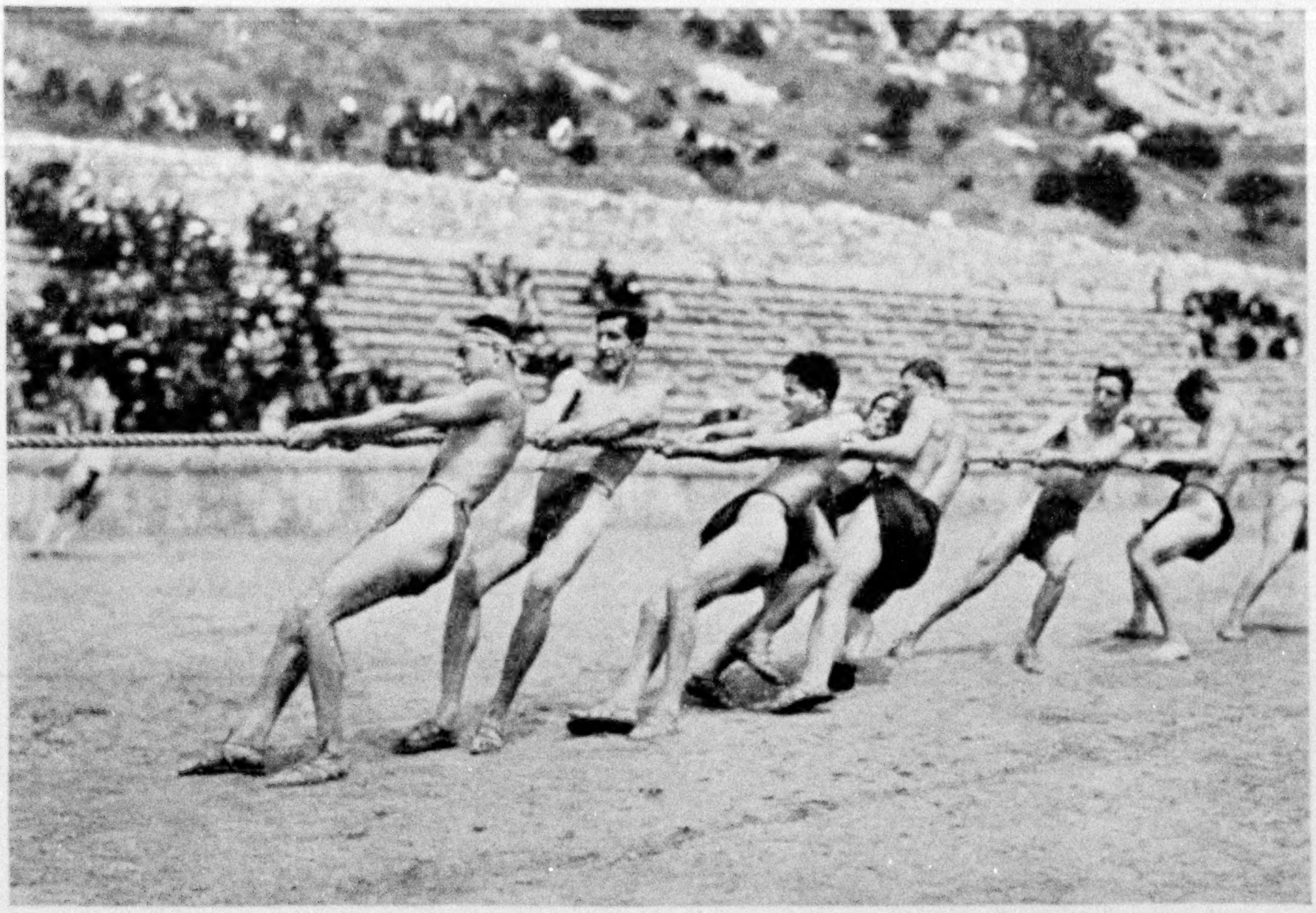
A KUTZO-VLACH CAMP NEAR XANTHI

The nomads themselves do not use the word Kutzo-Vlach or "lame Vlach," but call themselves Rumani. The woman is using the distaff and spindle, slight variations of which are common throughout the East as far as China.



A VLACH WOMAN WEAVING HOMESPUN ON A PORTABLE LOOM

The Kutzo-Vlachs, or Rumani, gave their name to Rumania, where they were dominant in the 13th century. Perhaps 10,000,000 Vlachs of Latin race are now scattered over Europe. The roving tribes in Greece are conspicuous because of their homespun dress, often decorated with distinctive patterns.



A REVIVAL OF THE PYTHIAN GAMES IN THEIR HOME STADIUM

Greek soldiers who appeared in a series of athletic contests are here engaged in a tug-of-war.

promenade up and down, modern editions of the ancient chorus. Men in straw hats chop the air with their flattened bands, making manual training of politics. Mammas call to their children, who never seem to sleep, and restless peace pervades the land.

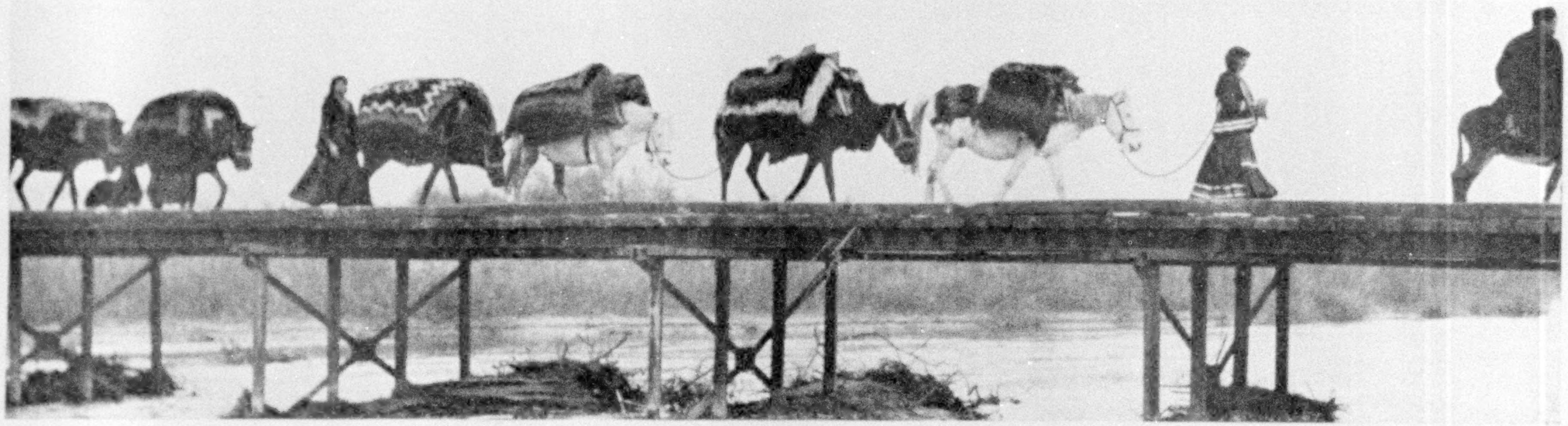
Athens is rapidly becoming modernized. The subway station at Omonoia, its central square, is one of the busiest in Europe. A huge new structure stands at the head of Stadium Street. Good hotels are available and the Athenian garden restaurants are veritable oases on summer nights. But the main advance in recent years has been the new water supply provided by American engineers. A lake has appeared near Marathon, held back by a dam faced with such Pentelic marble as graces the Acropolis. The water comes in part through Hadrian's Aqueduct and at long last Athens and its suburbs have water enough even for the vastly increased population.

THE STADIUM, CENTER OF HELLENIC PAGEANTRY

The ancient stadium, newly sheathed in marble, is still the scene of pageantry (see illustration, page 651). In ancient times it rang to the cheers of frenzied crowds; but perhaps no event, even in the old heroic days, equaled that when a Greek peasant, Loues, won the Marathon race at the first modern Olympic Games in 1906. Women tore their jewelry from wrist and throat to offer to him, and an Athenian bootblack promised him free shines for life. One who thinks of a Greek shoeshine as the quintessence of the ephemeral realizes that this impulsive offer, if accepted, amounted to peonage. At the sound of a brush whacked against a wooden box, half of Athens shifts its feet.

Pausanias knew the stadium soon after Herodes Atticus gave marble seats and partitions to the partly natural amphitheater. "The greater part of the Pentelic quarries was used up in its construction," was his false second-century impression.

Forty years ago zigzag paths cut through the underbrush and several led up over the earthen slope at the curved end. But Greece is rich in public-spirited philanthropists. One of them resheathed the structure in Pentelic marble and to-day the world contains no finer stadium than this.



THE ANNUAL DESCENT FROM MOUNTAIN TO PLAIN

The Kutzo-Vlach herders, grazing their flocks in the uncultivated regions, help provide Hellas with much-needed meat. A small party is here crossing a stream near Salonika on its way from the border mountains to the Khalkidike.

A RURAL PANORAMA IN MACEDONIA

In the background are the frontier mountains between Greece and Bulgaria. A new road from Drama to Kavalla cuts across the scene. The spoke-wheeled carts probably belong to refugees from Asia Minor, as the older residents still use solid wooden wheels.

THE ANCIENT THEATER AT DELPHI DURING A REVIVAL OF AESCHYLUS'S "THE SUPPLIANTS"

The suppliant maidens gather around the man whom they hope will prove their host and protector. He declares his name and rank. "My name Pelasgus, ruler of this land, and fathered with my name the men who reap earth's fruits beneath my sway are called Pelasgi." The stiff silks are intended to convey the impression of Egyptian bas-reliefs and murals, quite unlike the softly curving draperies worn by the Oceanids in "Prometheus Bound." At the foot of the Shining Cliffs automobiles are ready to carry visitors to Arachova, starting point for the climb up Parnassus.

No longer do the spectators thrill to the agility of a charioteer's assistant performing daring evolutions like those of a modern pedestrian amid motor traffic. National and international athletes still round the ancient Hermæ, but the most colorful exhibition is the Lyceum Club pageant. Whenever Greece wants a patriotic procession, costumers and barbers crowd into the modest rooms of the Lyceum Club, and lo, an ancient, medieval, or revolutionary epoch engulfs the city. All the revolutionary leaders pictured on the Centenary postage stamps recently paraded the streets.

Coming to this club after spending weeks in hunting out the few remaining native costumes in Crete, I was quickly provided with a bevy of society buds, dressed in distinctive costumes, from the remote regions of Greece.

RECORDING DISTINCTIVE BEAUTY BEFORE IT VANISHES FOREVER

Far and wide I sought local costumes in their native settings. A society leader of Athens provided an all-day picnic that I might photograph her splendid collection amid sylvan scenes. The Delphic Festival brought together such rich native dress as no artist could assemble. Gracious members of the National Geographic Society in Greece not only posed themselves, but also induced their friends to do so.

Although country folk still visit the classic sites, the discrepancy of picturing native dress against the background of ancient buildings was thoroughly appreciated. It is not suggested that the costumes pictured are still generally worn, even in the remote districts; but an effort has been made to have each costume true to its type. Few Greeks now know how to assemble or wear the native dress of former days. Peasants, eager to please, are liable to gather a hybrid combination of dress, shawl, and jewelry. The present series (Color Plates I to XXIV), made possible through generous collaboration, is as authentic as a mere man could make it. Soon only museum dummies will wear such finery.

The best opportunity for the casual visitor to Athens to see peasant costumes is at the annual Lyceum Club pageant, never twice the same. Perhaps the first spectacle goes back to the vivid colorings of Crete or Mycenæ. Then come the graceful robes of classic Greece, followed by the jewels, velvets, and coronets of Byzantine days.

But the climax of the performance, usually too late to be photographed in action, comes when hundreds of young Greeks swing in, clad in the distinctive dress of island and mountain village, singing the songs of revolutionary days or peasant life. Do not expect perfection in details; but the beauty and power of the gigantic spectacle are unmistakable.

THE TRIALS OF A GEOGRAPHIC FIELD MAN

To describe my adventures while seeking to make color photographs of the obsolescent costumes would take an article in itself. On the island of Skyros I remember a sweet-faced old lady patiently airing and packing away pleated skirts whose silk has not cracked even after many decades.

In the mountains of Epirus we drank toasts to success while success flew out of the window and heavy rain clouds settled in. In Crete two rival factions each claimed my attention during the last ten minutes of a pale winter sun. In Macedonia open covenants, openly arrived at among the men in the market place, made it as impossible to take feminine photographs as it is among the Moslem women of Anatolia. In Corfu I crossed the island when Sunday finery should have made the countryside glow like a tulip bed only to find that a high wind, shaking down the olives, had caused the women to hasten to the fields in workaday clothes.

The maladdress of chauffeur and interpreter, the timidity of mayor or headman, the bashfulness of the women, and the curiosity of men and children made costume-hunting as exciting as wild-game shooting. But at last I came to Delphi and fell among friends. Here the choicest of skirts and scarves, jackets and aprons, were worn by those eager to help. The Delphic Festival proved a thrilling climax to my travels.

GALA DAYS BESIDE APOLLO'S SHRINE

Among the sacred sites of Hellas, Delphi stands alone. One lands at the tiny port of Itea and passes through the finest olive groves of Greece. Higher and higher along

© National Geographic Society Natural-Color Photograph by Maynard Owen Williams

FORCE, AN ALLEGORICAL FIGURE IN ANCIENT GREEK TRAGEDY

Power and Force conduct Prometheus to unjust punishment. But neither can break the proud spirit of mankind's instructor and champion. Aeschylus's "Prometheus Bound" was the artistic triumph of the Delphic Festival of 1930, during which two ancient tragedies were enacted, Pythian Games were revived and native costumes and handicrafts were exhibited (see Color Plates XVII to XXIV).

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Natural-Color Photograph by Maynard Owen Williams

A BATTLE FRIEZE COPIED FROM THE ART OF ANTIQUITY

Members of the Salonika Y. M. C. A. here impersonate their Macedonian warrior ancestors in the ancient Stadium at Delphi.

© National Geographic Society

"MISS EUROPE" WEARING THE QUEEN AMALIA COSTUME

Soon after the Greek War of Independence (1821-30), this graceful costume was introduced into the Peloponnesus by the consort of King Otto.

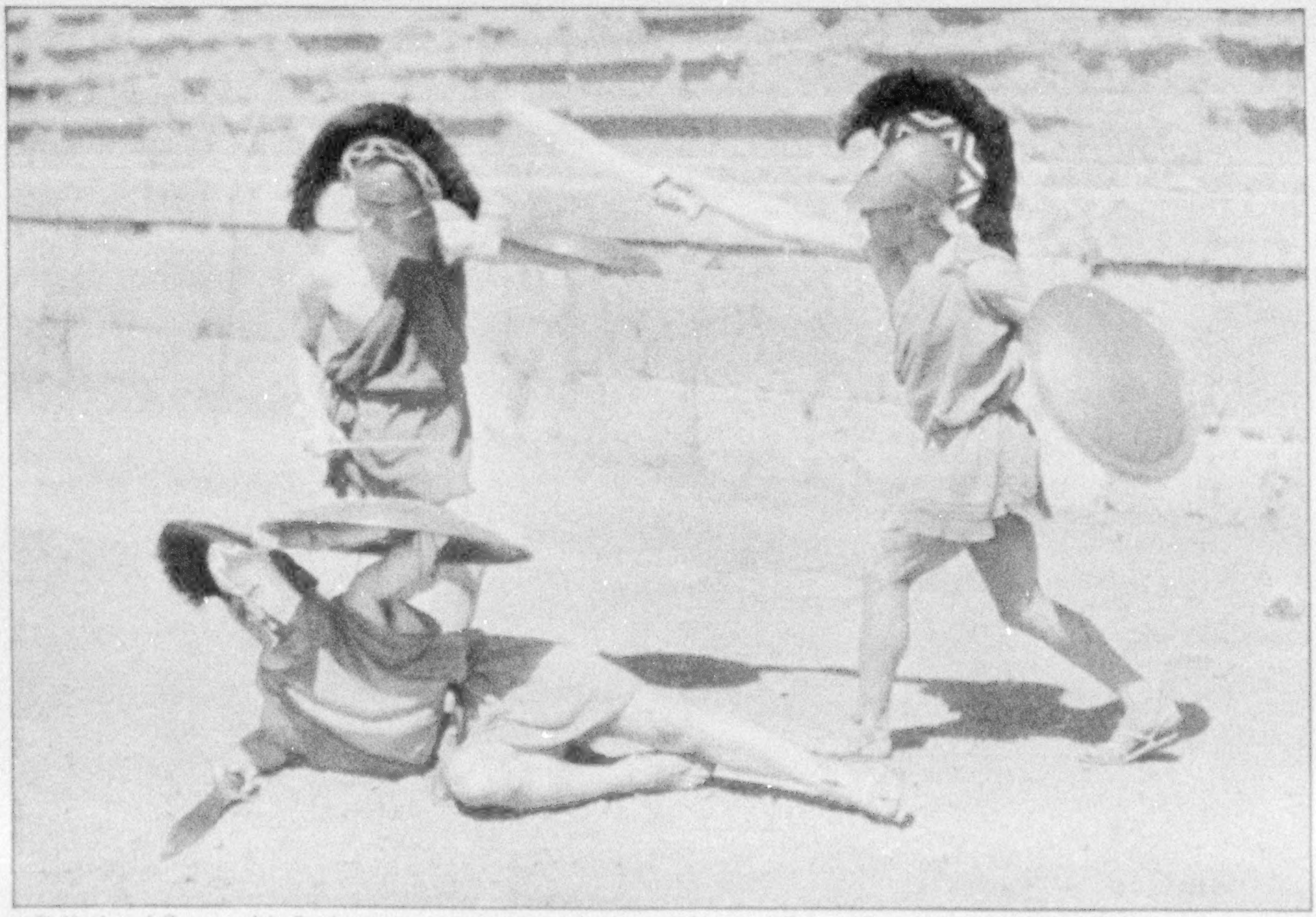
Natural-Color Photographs by Maynard Owen Williams

ONE OF THE FIFTY SUPPLIANT DAUGHTERS OF DANAÜS

The 1930 revival of Aeschylus's "The Suppliant Maidens" symbolized the hospitality Hellas recently showed to 1,500,000 Greek immigrants from Turkey (see also Color Plate XXI).

THE PRINCIPALS OF "PROMETHEUS BOUND"

Power and Force hold Prometheus, whom bare-armed Hephaestus is about to chain to the rock. The Aeschylan tragedy shows the hero protesting against the injustice of capricious gods.



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HOW SHIELD AND SWORD WERE USED IN THE DAYS OF ALEXANDER

Gladiatorial combats, peculiar to Rome, were never held at Delphi, home of the Pythian games, where these modern Macedonians staged this battle scene.

OCEANIDS, LIKE FIGURES ON A GRECIAN URN

After years of experiment, Mme. Sikelianos, director of the Delphic Festival, wove a heavy silk that would fall into such folds as those which give grace to classic Greek sculpture.

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THE SUPPLIANTS BEG KING PELASGUS FOR HOSPITALITY

Fleeing from forced marriage with their fifty cousins, the daughters of Danaüs arrive in Greece, and seek refuge with their distant kinsman, Pelasgus (see also Color Plate XIX).

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FESTIVAL VISITORS IN COSTUMES FROM FAR AND NEAR

These sisters at the Delphic Festival, which attracted spectators from all parts of Greece, wear the fringed apron of Macedonia and the lighter fabrics of Desphina, near Delphi.

Natural-Color Photographs by Maynard Owen Williams

PEASANT AND COURT DRESS NEAR THE SEAT OF THE ORACLE

The heavy embroidery of the farmer's wife and the velvet jacket and fez worn by Queen Amalia are here displayed near the site of the Oracle, whose word was law to many Greek leaders.

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RICH EMBROIDERY BRIGHTENS THE DRESS OF NEMEA

The fair visitor serves as a link between two similar sites. Nemea was as sacred to the Peloponnesian Greeks as Delphi was to the Delphic Confederation.

Natural-Color Photographs by Maynard Owen Williams

A GADFLY SYMBOLIZES THE WRATH OF A JEALOUS GODDESS

To avoid Hera's prying eyes, Io, beloved of Zeus, had been changed into a heifer. This impersonation of the unhappy heroine in "Prometheus Bound" was a feature of the Delphic Festival.

AN ATHENIAN BELLE AT THE DELPHIC FESTIVAL

The rich peasant dress from the plain of Thessaly added an unusual note to the exhibition of native handicrafts.

© National Geographic Society Natural-Color Photographs by Maynard Owen Williams

MODERN NYMPHS DANCING ON THE STORIED SLOPES OF PARNASSUS

The costumes, from left to right, are those of earthquake-ridden Corinth; of Tanagra, famous for its figurines, and of Attica.

the slopes of Parnassus zigzags the road until Kastri is reached. This village dates from 1892, when the French excavators, searching for the secrets of Delphi, moved the whole encumbering village around the slope, just as American archeologists will soon move a considerable section of Athens.

"PROMETHEUS BOUND" IN A CLASSIC SETTING

Properly to appreciate the home of Apollo and the Oracle, one must get into the spirit of the place. The Delphic Festival of 1930 made this possible. While dining with the hundreds of amateur actors, I noted with what intellectual freshness these joyous folk greeted one another in parody verses in the Aeschylan meter. At the rehearsals I saw Power and Force, blinded by tragic masks and made haughty by the stiltlike cothurnus, fall to their knees and Hermes, the messenger of the Gods, arrive all out of breath, having mislaid his winged helmet. Girls who were to be Oceanids fumbled their lines, squealed when the pebbles of the theater bruised their bare knees, chattered against the splendid musical background, and generally cluttered up the orchestra.

But all that was forgotten when the real play began. Aristophanes might picture Euripides banting the corpulent muse of Aeschylus, or weighing his tragedy in the steelyards, but those pompous sentences, spoken by a defiant Prometheus and echoed by the age-old cliffs, had a majesty befitting the scene (see Color Plates XVII to XXIV).

When Delphi was in its heyday, delegates from rival States here met in a truce. The directors of the Delphic Festival hope to gather kindred spirits from the world over, and here cement a brotherhood whose members will spread peace and good will afar.

A HAND LOOM RECAPTURED THE CURVES OF CLASSIC DRESS

Every effort was made at the Centenary Festival to achieve accuracy of dress and armor. Mme. Eva Palmer Sikelianos, American by birth, worked for many years until she succeeded in weaving silken fabrics which would fall into the lovely folds of the ancient Greek sculptures, and fashioned other cloth which would have the stiffness of Egyptian art. When the Macedonian warriors returned from their mimic warfare in the Pythian games (see Color Plates XVIII and XX) more than one head bore the imprint of the heavy helmets faithfully copied in copper from classic models.

Native handicrafts were exhibited. Athletic contests were held. Peasants whirled in native dances. Pipes squealed and tom-toms boomed. Through the dark streets of the town Parnassian shepherd and city lass tripped the evening hours away.

For a fortnight the storied slopes of Parnassus regained their youth. An Oceanid coming home from the theater at twilight seemed a mountain nymph or a wood sprite. Well-muscled youths, dressed in classic tunics, ran along the grassy hillsides or sat about their tents singing songs.

THE GLORY OF GREECE IS NOT DEAD

I lived in a peasant home. Look into the faces of my hostesses and tell me that those happy, hectic days at Delphi were in vain! Where the Oracle had uttered ambiguities, the living folk were positive in their friendliness (see Color Plate XV).

It is this friendliness which remains as my most vivid impression of Greece. I know the curiosity, the familiarity, the insistence of the Greek. A hundred times I have inwardly fumed at seemingly senseless irritations; but from the returned Greek-American to the upcountry peasants or Vlach shepherds, who know no other land, the living residents give the Greece of to-day such appeal for the modern guest as classic Greece had for the scholar.

The glory of Greece has not departed. No child of Hellas is called Ichabod. On motor road and mountain trail even the hurried traveler still senses that Hellas is a land set apart, that something blessed still permeates the atmosphere of this rocky little land whose life to-day, as yesterday, is so intimately connected with our own.

THE WORLD'S HIGHEST INTERNATIONAL TELEPHONE CABLE

CHILE talks now with New York, London, or Paris across the cold, empty Andes, on the highest international telephone line ever strung. "Peaks of Andes Used as Telephone Poles," a news headline might say, in reporting this latest feat by puny but valiant man in his conquest of Nature.

Braving ice, accident, and avalanches, North American and Chilean engineers, by sheer strength and persistence, dragged this heavy cable up and over the freezing, wind-swept mountain passes, blocked with drifts for months each year. Deep snow here causes frequent slides, or avalanches, before which even the stoutest poles are as wheat straw in a Kansas cyclone. So, to keep the cable from being swept away, workmen dug a ditch many miles long, over the higher Andean wastes, and buried the cable in it.

FROM 12,300 FEET ABOVE TO 21,000 FEET BELOW SEA LEVEL

Near the tiny hamlet of Las Cuevas, on the Argentine side of the Andes, the line reaches a point 12,300 feet above sea level. By contrast, the submarine telegraph cable off the coast of Chile rests on sea bottom in 21,000 feet of water, showing the amazing physical geography in this part of the world.

Dangerous and difficult though these lonely Andean passes are, stubborn man has long used them in his restless transit across South America. Toiling on foot or shouting and stoning their lazy llama pack trains, native races of long ago traveled the worn trails that parallel the winding Aconcagua River, up ever-narrowing canyons, under cliffs, and along the edge of dizzy precipices.

In the glittering days of Spanish viceroys, when the King of Spain ruled much of South America through his agents at Santiago de Chile, pack trains and soldiers used these same Andean trails to reach Tucumán, Córdoba, and ancient Cuyo country.

In these same bleak passes where the big cable now carries spoken words, once echoed the shouts of San Martin's famous "Army of the Andes," when Chile and the Argentine, more than a century ago, wrested independence from Spain.

For much of its length the cable parallels the well-known "rack" railroad crossing the Andes. It took years to build this difficult railway, whose maximum grade is 8 per cent.

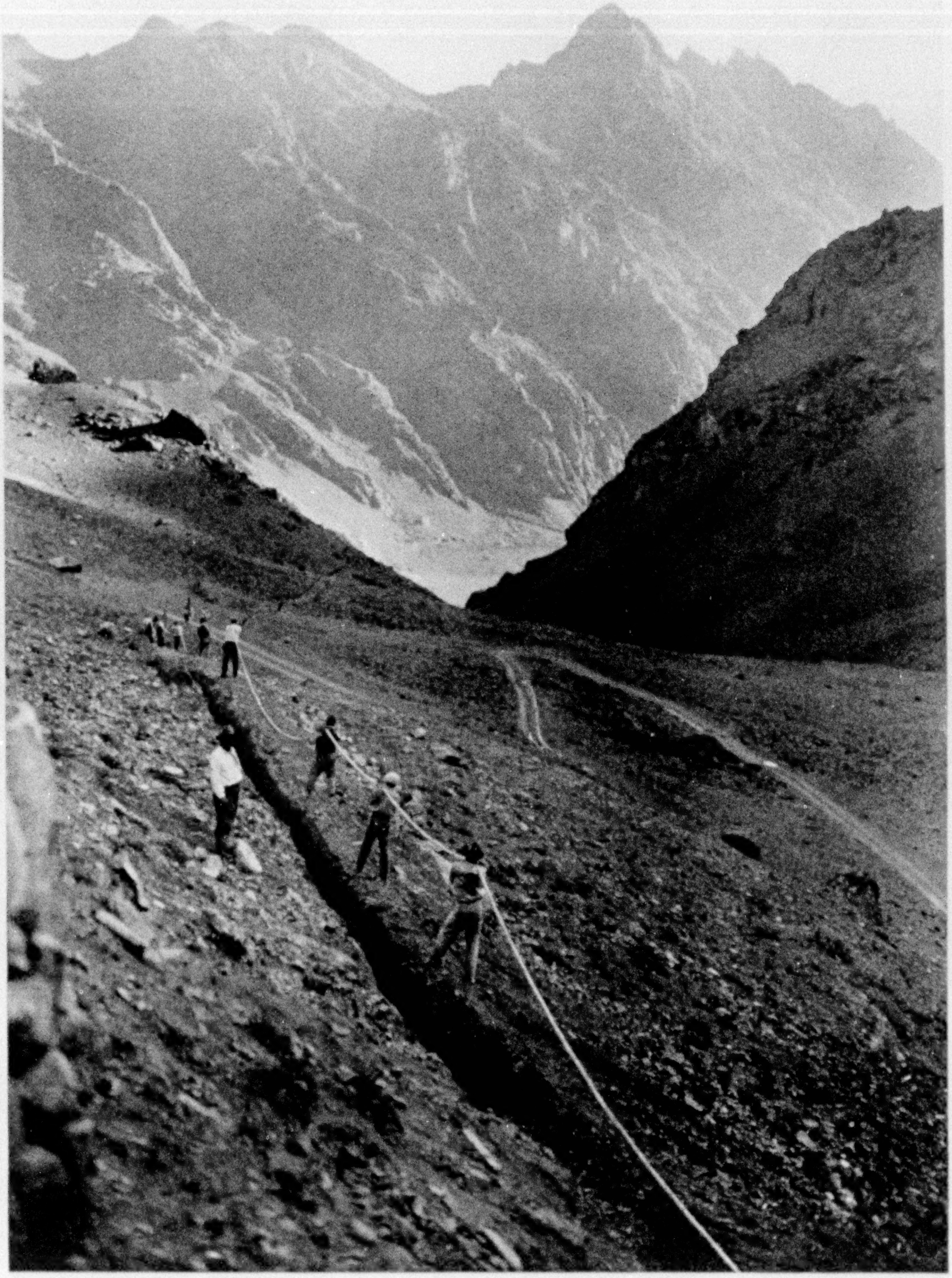
THE TRAIN CRAWLS UPWARD "ON ITS TEETH"

At Mendoza, on the Argentine side of the Andes, you leave the standard track and transfer to narrow-gauge coaches. For several hours a locomotive of the "adhesion" type draws the train. Finally, when grades grow steeper, your engine crawls on the toothed rails of the "rack" system. As you climb slowly higher and higher, tunnels and snowsheds increase in number and length. Vegetation disappears.

To make this trip in June or July, which is midwinter there, is to see the Alps of South America in all their glistening glory. Sometimes snowplows precede your train. In July, 1930, scores of passengers were delayed many days at each end of the Transandine line, waiting for 25-foot drifts to be cleared. Up in these passes resort hotels have risen, and holiday seekers come from Valparaiso, Santiago, Buenos Aires, and Montevideo for winter sports. One even sees soldiers training on skis.

Winding ever upward, the road runs in the shadow of Mount Tupungato, 21,550 feet high, and past an odd rock formation known as "The Penitents," from its resemblance to a procession of cowled monks. Then you stop at Puente del Inca, a strangely formed natural bridge which gives the district its name. Just beyond this bridge, if the day is clear, you can glimpse great Aconcagua, highest mountain in the Americas, whose snow-capped peak rubs the sky 23,080 feet above the sea.

At Las Cuevas the westbound train crawls into the mountain side from Argentina to emerge on Chilean soil. Over the hill through which this two-mile tunnel runs is laid the telephone cable; and, if the day be clear, just as your train emerges in Chilean sunshine you can look up at the hilltop and behold that famous



Photograph by Gomez

NOW CHILE MAY TALK OVER THE ANDES WITH NORTH AMERICA AND EUROPE

Incas, shouting up these valleys, were heard only a few rods. Now, over this earthquake- and avalanche-proof armored cable, Chile not only talks easily with Argentina, but by submarine extension with Uruguay, and thence by radio telephone with Europe, the British Isles, and North America.

Photograph by Gomez

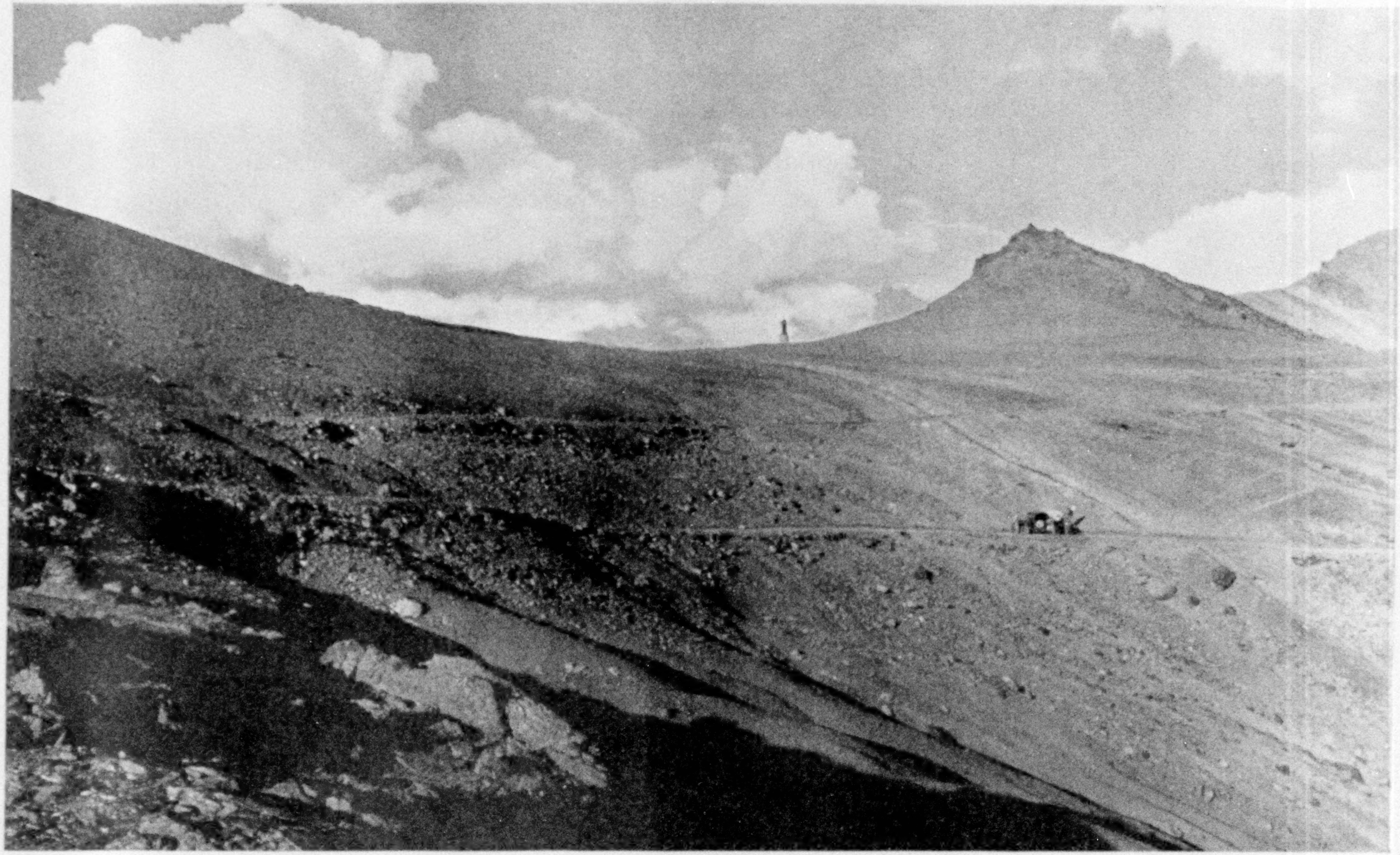
HIGH ON THE ROOF OF THE NEW WORLD RISES THIS FIGURE OF CHRIST, THE REDEEMER

Dedicated more than 25 years ago, the monument stands as a symbol of peace on the boundary line between Chile and Argentina, more than 12,000 feet above the sea and on the very ridge of the watershed between two great oceans. The two-mile tunnel of the Transandine Railway runs underneath this ridge and the telephone cable is laid over it.

Photograph courtesy of I. T. & T. Co.

IN THE HIGHER PASSES OF THE ANDES NO LARGE PLANT OR ANIMAL LIFE EXISTS

Between the statue of Christ and the old shelter hut a long line of workers is seen carrying the heavy telephone cable over the great divide. The loops of roadway at the left are switch-backs on the motor highway which is being developed over the Andes to connect Santiago de Chile with Mendoza and other Argentine cities. The road leading down to the left descends into Chilean territory.



Photograph by Gomez

BY TRAIN, BY TRUCK, AND THEN ON MEN'S SHOULDERS, THE CABLE WAS CARRIED OVER THE HIGH, COLD, EMPTY PASSES OF THE ANDES

At this point on the roadway, more than two miles above sea level, giant spools holding sections of the heavy cable, weighing 1½ tons, were taken from trucks, the cable unrolled, and then carried on men's backs over the great transcontinental divide.

Photograph by Gomez

TESTING A SPLICE IN THE GREAT CABLE

The core is covered with two bands of special steel wrapped in opposite directions and separated by a layer of impregnated fabric. Many delicate scientific instruments had to be carried along to test each section of cable before it was spliced. The top of Mount Tolosa in the background.

Photograph courtesy of I. T. & T. Co.

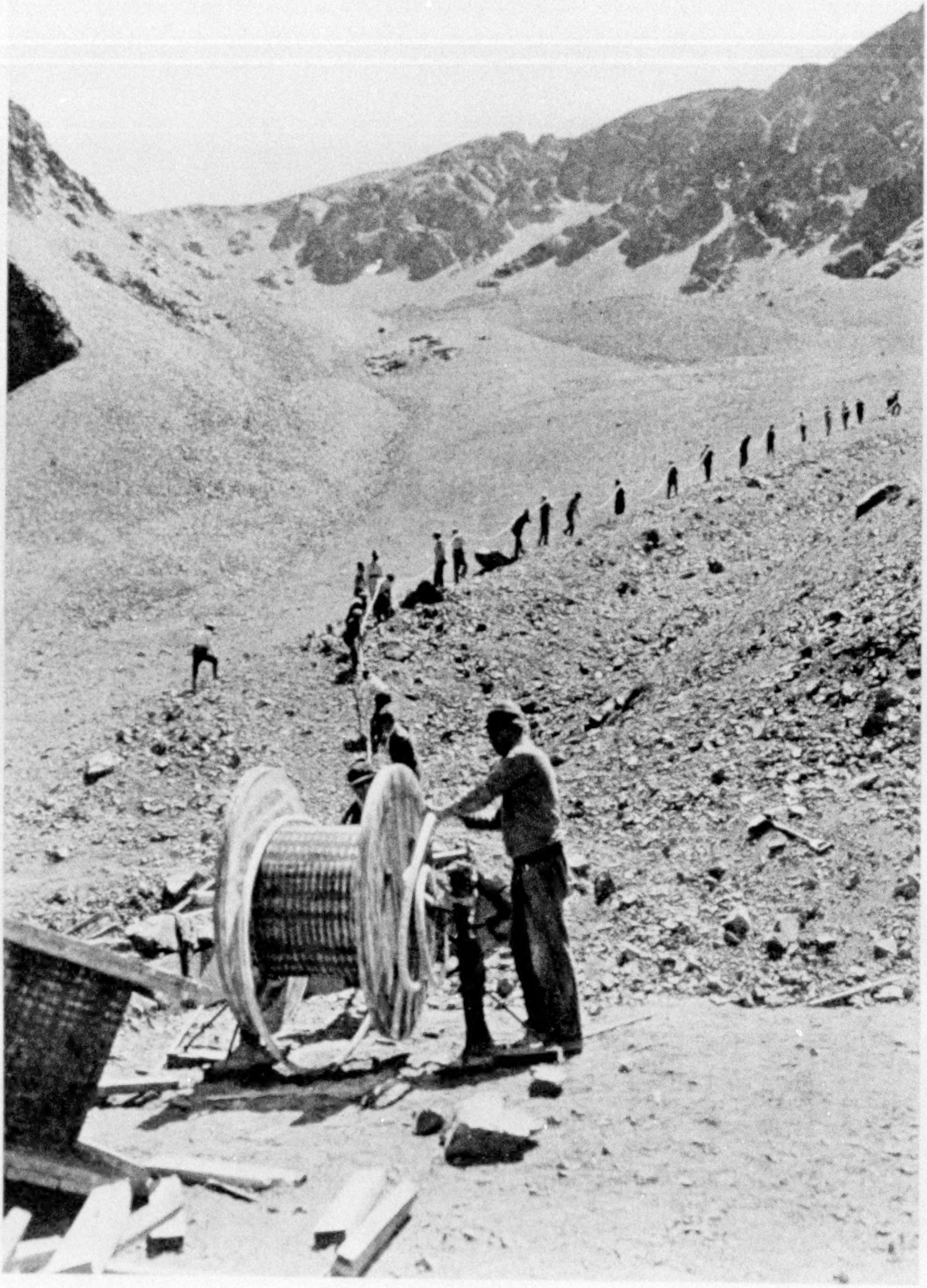
FOR 2,700 MILES THE ANDES RISE ALONG THE COAST OF CHILE

Leaving fertile green valleys, the motor highway zigzags higher and higher into this cold, windy region. The picture was made in February, which is midsummer in far southern latitudes. From May to August deep snows fall here and often all traffic is blocked. Up this pass runs the telephone cable.

Photograph courtesy of I. T. & T. Co.

AN ABANDONED HUT FORMERLY USED BY TRANSANDINE MAIL CARRIERS

In high passes, where deep drifts, blizzards, and avalanches are most frequent, these huts often stood only a few hundred yards apart. They saved the lives of many weary horsemen and pedestrians before the railroad came. Aided by snowsheds, tunnels, and snowplows, and an army of shovel men, the railway is kept open now, except during storms of unusual severity.



Photograph by Gomez

UNWINDING A SECTION OF HEAVY CABLE FROM THE BIG SPOOL

Work here is being carried on at an elevation of 10,000 feet. In places the cable was carried nearly half a mile higher. Only men specially trained for mountain work could stand the severe physical strain of this activity.

peace monument, the Christ of the Andes, which stands more than 12,000 feet above sea level, on the Chile-Argentine frontier.

Far below, though still at 9,000 feet elevation, Inca Lake is set among the peaks. Still descending, your train creaks, squeals, and winds in and out among mountains of infinite majesty, dignity, and distance, rattles over bridges that span roaring cascades, to emerge at last into fertile, green valleys of Chile.

AN ASTOUNDING PANORAMA FROM A LUXURIOUS PASSENGER COACH

In clean, safe, steam-heated trains, this is a fascinating trip. You may sit comfortably at lunch and look out through plate-glass windows at one of the world's most astounding panoramas. But you merely see it. The workers out there along the track, in skating caps, ear muffs, and mittens—the engineers on snow shoes and the crew driving the rotary plow against the drifts—they not only *see* but they feel and smell the Andes.

And they hear the voices of the high passes, the hiss of snow and shriek of winds around the crags, the roar of avalanches.

Down the smooth, steep, snow-covered slope of one mountain, plainly visible from the train, an avalanche had slid. Countless tons of rock, dirt, and snow, coasting straight down from the very clouds, had left a long, perpendicular scar. "What is that funny trail down the mountain side?" asks a solitaire player, looking up from his cards. No one answers.

To save their cable from these slides, the telephone engineers buried it in the rocks all the way from Las Cuevas, on the Argentine side, over to Juncal, in Chile.

"When we picked out the route for laying our cable over the Andes, it was not with the view of keeping close to roads and trails," said an official of the American-owned telephone and telegraph company. "What we sought was a path that would give the cable the most shelter and minimize the danger of breaks from avalanches, landslides, or earthquakes.

"But always we had to carry the heavy cable on the last lap of its hard journey up steep mountains and over cliffs, to where we had blasted a sunken way for it. Only picked men could stand this tremendous physical ordeal. We chose only those who had worked for years in high altitudes. Even the blasting and digging of our cable's underground path over this roof of the world, a ditch many miles long, was a back-breaking task."

ANOTHER BARRIER DWINDLES

Once the Andes separated Chile and the Argentine not only physically and in a commercial way, but also formed a barrier against intellectual, social, and artistic relations. Now, by this new cable, friendly intercourse is easy; and not only can Santiago talk over the Andes and across the far pampas to busy Buenos Aires, but by a 66-mile cable under the great River Plate she can talk to Montevideo, in Uruguay, and from there on by radio telephone to Europe, the British Isles, and the United States.

When the Airplane Survey party, which was sent to South America a few months ago by the National Geographic Society, reached Santiago de Chile, one of its members called The Society's headquarters in Washington, D. C.

Over thousands of miles of sea, jungle, plains, and Andean snows this long-distance dialogue was held as easily as if the speakers had been face to face.

What a contrast since doughty old Tupac Yupanqui, the Inca warrior, braved these Andean passes! Probably it often took him weeks to get his runners through. Now, when the passes are free of dangerous storm clouds and fogs, planes fly every week between Santiago and Mendoza. A highway more or less parallel with the railway has been blazed across the Andes, and automobiles can make the trip, barring snow, washouts, and landslides. If they break down now, they can telephone for help!

The Andes are as high, cold, and vast as ever. They only seem less so now because trains and planes are faster than mules and llamas, and because our voices on the new telephone cable carry farther than the voices of General San Martin and old Chief Tupac Yupanqui shouting across the canyons.

Photograph by Jacob Gayer

ROYAL PALMS IN RIO'S WORLD-FAMOUS BOTANICAL GARDENS

The imposing colonnade of white trunks and arching green tops towers almost 100 feet to form a natural avenue to the gardens. A single ancestral tree, planted in this garden in the early 19th century, is known as the "Mother of All Palms." See, also, illustration, page 747.

GIGANTIC BRAZIL AND ITS GLITTERING CAPITAL

By Frederick Simpich

Author of "This Giant That Is New York," "North America's Oldest Metropolis," "A Mexican Land of Canaan," etc., in the National Geographic Magazine

"I'd like to roll to Rio,
Some day before I'm old."

AFTER humming them twenty years, I succumbed to those lilting lines. Brazil faces the Atlantic Ocean for 3,700 miles. Its coastline extends from the River Oyapock, which separates it from French Guiana on the north, all the way south to Uruguay. That is twice the distance from Portland, Maine, to Key West, Florida.

And Rio de Janeiro, basking on golden sands almost astride the Tropic of Capricorn, is the capital of this vast Brazil, which is 65 times larger than England. And, amid all Brazil's amazing coastal panorama of prismatic forests, mysterious rivers, foaming cascades, untrod mountains, and polyglot, populous coast towns, Rio remains the very acme of human interest and beauty.

When, after weeks of travel down this incredibly long coast, you come suddenly to the glittering gates of Rio and behold this alabasterlike city of palms, marble, mountains, and color, you are astounded. Your very thinking slows down. There is really no such city, the mind repeats.

PEAKS PUNCTURE RIO'S BAY

Surely, here is some illusion from out an Arabian Nights dream, a magic supercity never built by man. Look at those amazing mountain peaks that rise from the sea. They cannot be of this world; they are unreal, like a landscape on the moon pictured through a telescope. Dumb before the sheer beauty of it, phantom childhood fancies recur. In a dream of long, long ago, wasn't there a city vaguely like this, with pearly gates . . . ?

"Get ready for the quarantine doctor," warns the voice of authority. So Rio is a regular city, after all. You breathe and look again at the shimmering, peak-punctured bay, dotted with palm-grown isles and fringed with placid inlets that lead to the mouths of tree-lined mountain avenues. In vain men have compared this with the Golden Horn or the Bay of Naples. But it is like nothing else. It is the Bay of Rio—majestic, matchless, the supreme architecture of God.

And, as the harbor is Nature's masterpiece, man strives to make Rio fit the picture. Its ornate, flamboyant water front suggests the glittering skyline of Baghdad, as you first glimpse the oriental city from a steamer sailing up the Tigris, with its domes, mosques, and minarets.

To enter this great world port you walk down the gangplank and straight out into a formal garden with a big bronze fountain. This leads off into a Fifth-Avenue-like boulevard, which in turn flows into a wide, world-famous beach drive, past embassies, clubs, and more palms and geometric gardens. Dingy docks, pawnshops, pool halls, quick-and-dirty cafés, cheap rooming houses, touts and runners, dirt, smells—all the trash and claptrap of many other water fronts are missing here.

"This, at last, is Spotless Town," says a touring ad-writer from Chicago. "I couldn't be more astonished if I should see the newsboys wearing morning coats, tile hats, and white carnations."

"And the *colors!*" murmurs the lady from Newark, who painted posters for a billboard firm. "If ever there's a beauty contest among queen cities of the world, Rio will win. And my guide says they actually *scrub* the streets every night."

To reach our hotel, we turned left into the Beira Mar, or "Edge of the Sea," often styled the finest ocean boulevard in the Western Hemisphere. Again we saw the startling profile of the singular peaks that rise about the bay, compared by some to a herd of big elephants sitting in grotesque pose. They include the much-photographed Sugar Loaf, the oddly shaped Corcovado, or Hunchback, with a great figure of Christ now being erected on its top, and the 3,346-foot Tijuca.

Rising fully 1,200 feet and almost straight out of the sea, Sugar Loaf is easily Rio's outstanding landmark. Incoming air pilots, if half lost in fog or rain, hail its familiar outlines with grunts of relief. In a queer aërial trolley—a dizzy trip which is a supreme triumph for

Photograph by Albert W. Stevens

MISTAKING THIS VAST BAY FOR THE MOUTH OF A GREAT RIVER, EARLY NAVIGATORS NAMED IT RIO DE JANEIRO, OR RIVER OF JANUARY

The full name of Brazil's capital is São Sebastião do Rio de Janeiro. The French, about 1555, made the first real attempt to found a colony on the bay, but were later driven out by the Portuguese Governor General, Mem de Sá, the actual founder of the city on its present site.

Photograph by Albert W. Stevens

HOW MANY-SIDED RIO UNROLLS ITS PANORAMA TO AIR PASSENGERS 5,000 FEET OVERHEAD

In the lower right is the old Church of the Rock, or Igreja da Penha, many miles from the downtown districts (see, also, illustrations, pages 743 and 744). Sugar Loaf rises in the middle background, and at the upper right is Corcovado, or Hunchback.

Photograph by Albert W. Stevens

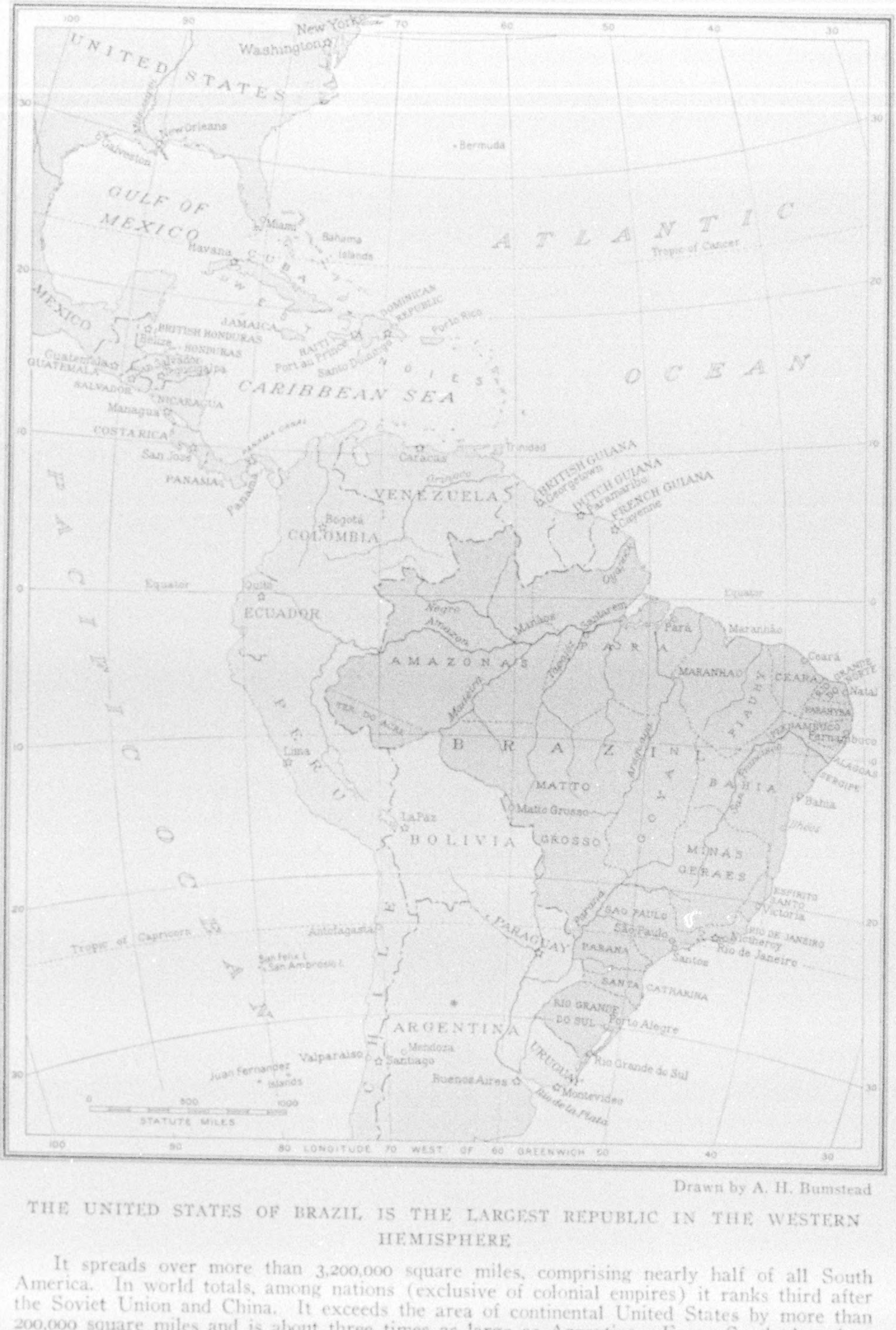
RIO AND NICTHEROY FACE EACH OTHER ACROSS THREE MILES OF BLUE WATER

Nictheroy, at the left center, lies 15 minutes by ferry across the bay from Rio, and is closely related to it, as Oakland is to San Francisco. It is the capital of Rio de Janeiro State, while the larger city is capital of the Nation.

Photograph by Jacob Gayer

THE WIDE AVENIDA RIO BRANCO, WHERE IT ENDS, BEFORE THE GRACEFUL MONROE PALACE

A reproduction of the cream-colored "Brazilian Building" at the St. Louis Exposition of 1904, the Monroe Palace is one of the show places of Rio. Under its ornate dome the Senate holds its sessions. One of the unique features of the street is its sidewalk, made up of stones laid in wavy patterns. "To walk this street on a hot sunshiny day calls for steady nerves" (see, also, illustration, page 745, and text, page 739).



Drawn by A. H. Bumstead

THE UNITED STATES OF BRAZIL IS THE LARGEST REPUBLIC IN THE WESTERN HEMISPHERE

It spreads over more than 3,200,000 square miles, comprising nearly half of all South America. In world totals, among nations (exclusive of colonial empires) it ranks third after the Soviet Union and China. It exceeds the area of continental United States by more than 200,000 square miles and is about three times as large as Argentina. Every South American country except Chile and Ecuador touches its boundaries. Its enormous area is divided into 20 States, the Territory of Acre (bought from Bolivia in 1903 for approximately $10,000,000), and a Federal District.

the nervous—you can reach its top in two laps. The first stage carries you to the top of Urca; there, if still conscious, you ride on up to the crest of Sugar Loaf for a balloonlike view of the bay and city.

To see this aërial car lit up and crawling that mountain at night is to fancy that the world's biggest lightning bug has just landed from the Amazon jungles.

A SPECTACLE FROM SUGAR LOAF

Look at this spectacular city from Sugar Loaf, Hunchback, or any high angle, and you see how smoothly in mass, form, and color it harmonizes with the shape and shades of its terrestrial environment.

You observe that it is cohesive, one work of art; yet it is not a solid city, with a checkerboard pattern of blocks and squares squeezed into rigid "city limits," like Leipzig or Indianapolis.

Something easy, loose, and fluent in its multicolored distribution makes you feel that Rio is simply *flowing* down from the mountains about it in graceful architectural streams, then coming to rest in quiet valleys and on sandy beaches.

Fly over it and its marvels only multiply; it has so many parts, sections, and suburbs; and in its pattern, from the sky, it looks like a great paint-spotted easel of blue water, yellow sand, green trees, red roofs, pink and blue walls. Think of all these colored parts turning round and round, like the odd-formed bits of colored glass in an old-fashioned kaleidoscope. Then you can imagine exactly how Rio looks from an airplane that banks and turns, a mile above it, on a bright, clear day.

Back to earth, on the famous Avenida Rio Branco, the Unter den Linden or Fifth Avenue of Rio de Janeiro, you meet the city at its best; also, familiar big-town sights, sounds, and smells make you feel normal here and much at home.

AT HOME IN RIO

New York papers, any popular North American magazine, chewing gum from Chicago, your own favorite brand of safety razor, cigarettes, fountain pen, writing or talking machine, sport roadster, ice-box, or outboard motor boat—all are here, with all their familiar show-window placards that greet you on Main Street anywhere from Syracuse to Seattle. Likewise, radio sets, crooning to crowds the latest Broadway "hits"; displays of North American cameras; enlarged snaps of local bathing beauties having Brazilian "it"; groups of soccer players; the dark horse that paid 20 to 1 at last Sunday's races and his popular jockey, pictured peeping through a big horseshoe of flowers.

And Rio, window-shopping here, looks in on Paris perfumes, soaps, chapeaux, gowns and lingerie; German etchings, water colors, oils, and shelves of drugs and surgical instruments and hardware; English rackets, balls, cricket sets, saddles, socks, hats, and pipes; and, most significant of all, the steady march of Brazil's own manufacturing, revealed in huge stocks of textiles, leather, shirts, clothing, dishes, drygoods, toys, shoes, and packaged food—all "made in Brazil!"

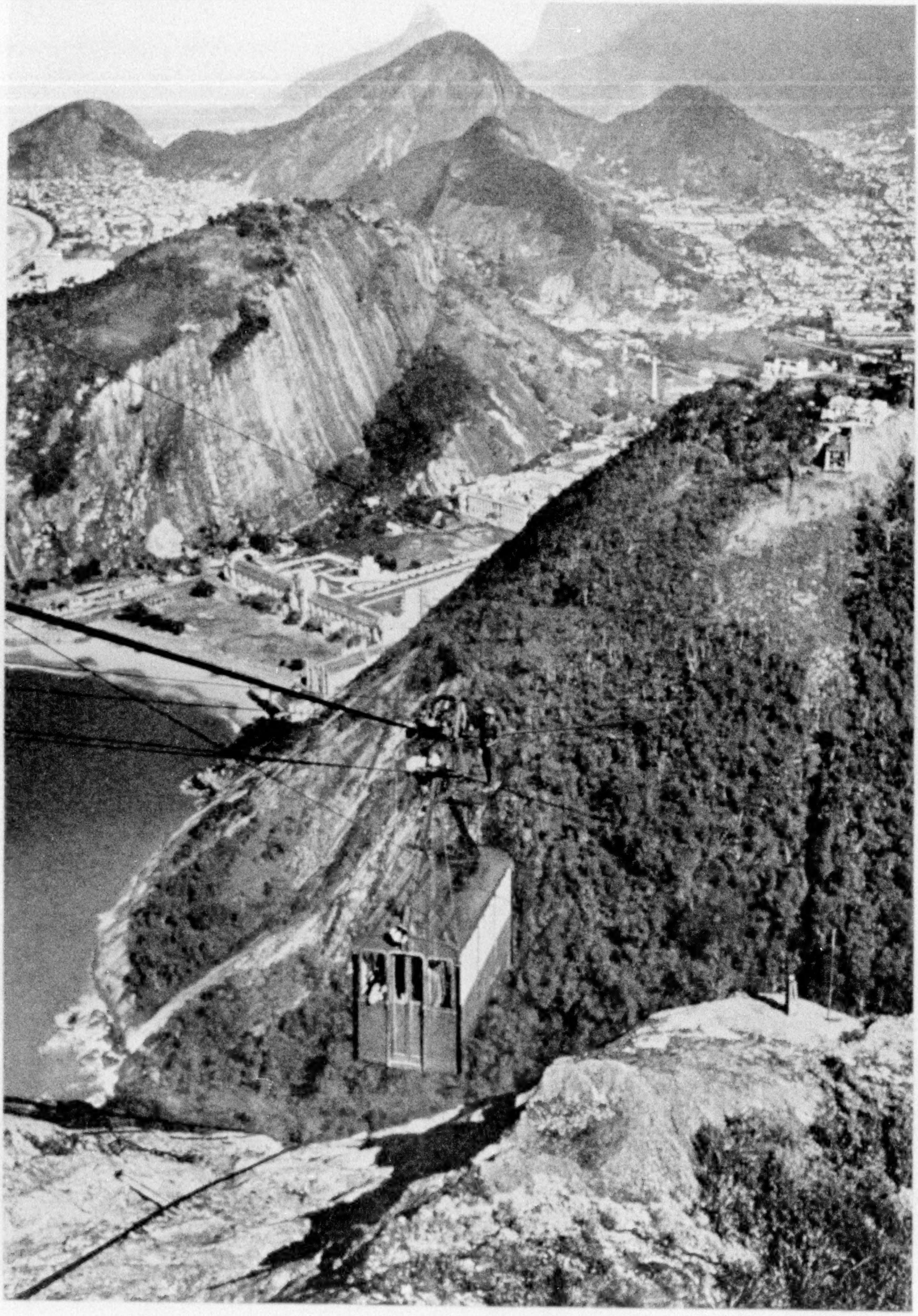
This wide, resplendent avenue, one and an eighth miles long, lined with beautiful trees, and piercing the city from the Beira Mar to the piers, was boldly opened only two decades ago in the ambitious plan for a better city. To cut it through, nearly 600 buildings were razed.

COFFEE IS RIO'S CUP THAT CHEERS

One of its startling aspects is its sidewalk, made up of small stones of different colors, laid in zigzags, in waves, and in other dizzy patterns. To walk this street on a hot sunshiny day calls for steady nerves. Before a newspaper building you think you see printing-press pictures worked in the stones, and in front of the Jockey Club horses race through the colored rocks.

But it is the people who interest you most, especially the crowds who promenade late in the afternoon. Coffee shops, cafés, and tea rooms line the Avenida Rio Branco, many with wide colored awnings that reach out over the pavement. Flocks of tables are set out here in the open air, so that patrons may sip drinks, smoke, and watch the well-dressed, handsome women who stroll by to be admired. This is a custom of the country. It is perfectly correct to cast admiring glances, and the women do not resent it. In fact, they expect it. And, on fine evenings, the passing show is not unlike a parade of mannequins displaying the latest styles in feminine garb at a New York fashion show.

Although prohibition is unknown in Brazil, very few seem to dally much with the cup that cheers. Cosmopolitan seaport



Photograph by Jacob Gayer

STEEP BUTTES AND PEAKS DIVIDE RIO INTO MANY PARTS

Only from the air can the visitor best see the city as a whole. In the foreground is the aerial tramcar which carries sight-seers up to the summit of Sugar Loaf (see, also, text, page 733).

Photograph by Jacob Gayer

TO RIO'S MUNICIPAL THEATER COME MANY OF THE WORLD'S BEST ARTISTS

The sumptuous playhouse, facing the crowded Avenida Rio Branco (see page 737) and built in Renaissance style, with a stairway patterned after that in the Grand Opera House of Paris, is famed for its mural paintings, marble sculptures, and bronzes.

A "WHITEWINGS" SCRUBS A RIO MARKET PLACE

The Chineselike building at the left is headquarters for the harbor police. At the right, the building of colonial design was erected for the Brazilian Centennial Exposition of 1922.

Photographs by Jacob Gayer

A RIO FOUNTAIN IN "FIFTEENTH OF NOVEMBER" PARK

A popular stroll leads through the recreation ground named in commemoration of the proclamation of the Republic, in 1889. It lies near the junction of several street-car lines and the largest docks. Much of its area was reclaimed from the sea.

Photograph by Jacob Gayer

THIS LONG STAIRWAY OF 365 STEPS LEADS UP TO THE IGREJA DA PENHA, OR "CHURCH OF THE ROCK"

Up the winding way many supplicants go on their knees—the sick and crippled to pray for cures, women to pray for husbands, and the barren to pray for children (see, also, illustration, page 744).

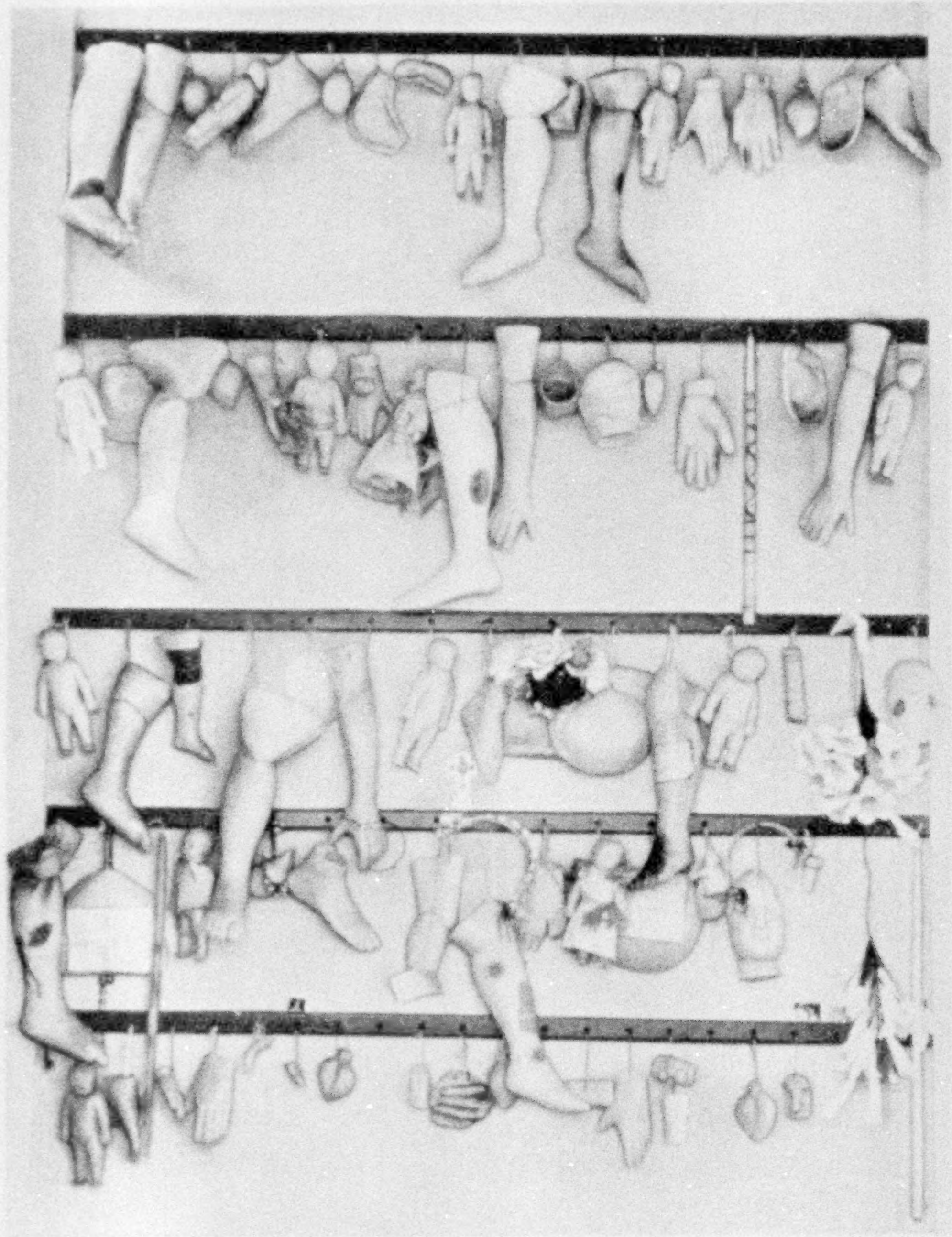
though it is, Rio is a most orderly and abstemious place. But it drinks coffee to excess.

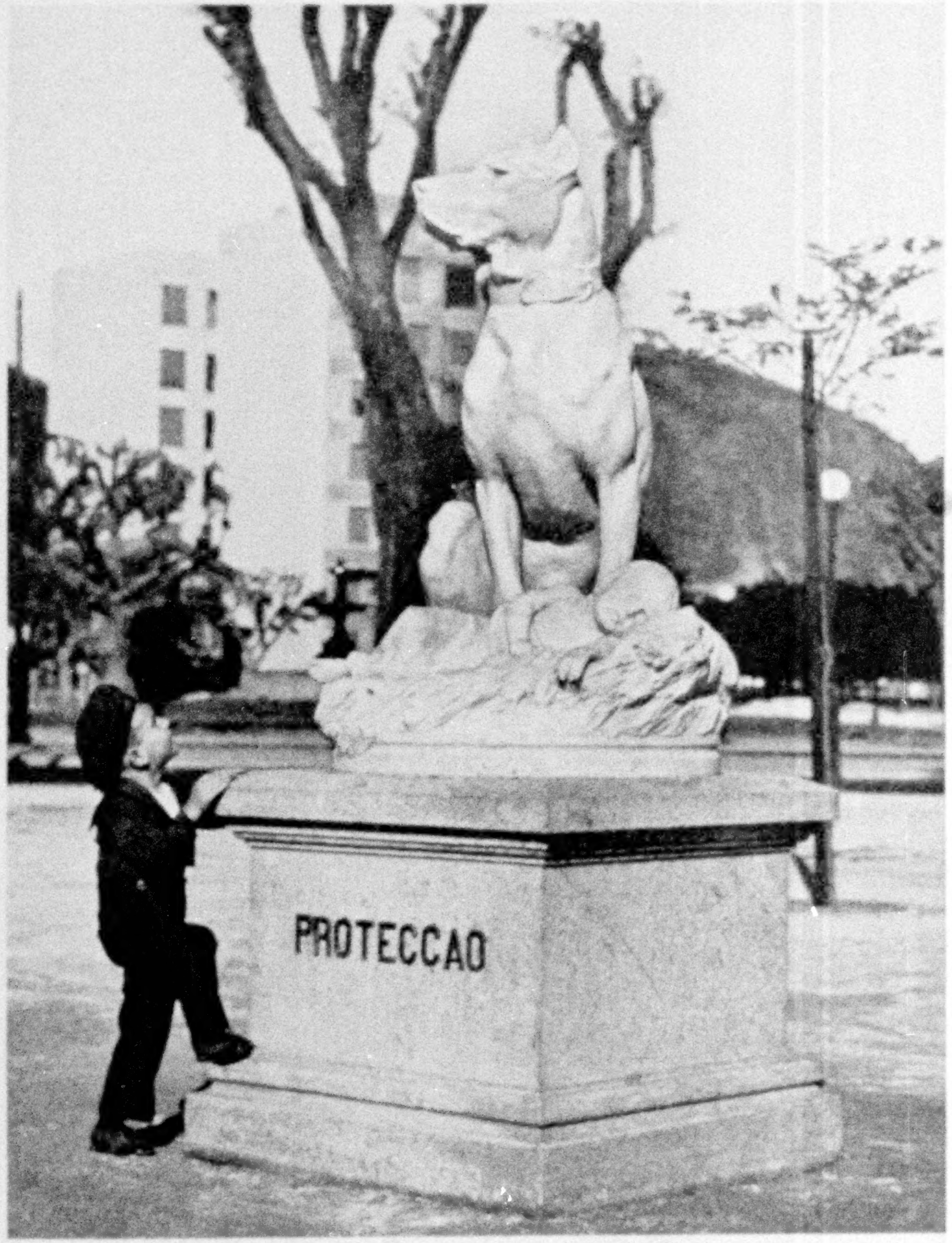
What we call lunch is breakfast in Rio. After this meal the brokers, bankers, merchants, and clerks all flock to their favorite resort to drink coffee. Late in the afternoon they all go again, and perhaps at various other times during the day they drop in for the tiny cup, if they happen to be near a café.

Coffee is taken very strong and sweet, as in the Near East. In the cheaper cafés an automatic bowl of granulated sugar is on each table. By means of a trigger, it shoots a man's allowance into his cup at one dash. Often you see men try it first toward the floor, to see if it is working!

By his dress alone you can seldom tell an upper-class Brazilian from a well-groomed European. You seldom see a man without a vest, even on hot days. Derby hats and canes are everywhere; some men carry fans; and bootblacks and barbers could almost claim an "essential occupation" to avoid the draft in wartime!

Here, along the Rio Branco, is the voice of the city. Around these sidewalk cafés you hear town talk, which may be in any one of three or four languages. It is a gossips' free-for-all. And here conversation is an art—as much enjoyed as music. All the lounging coffee-drinkers and the groups standing about wave their hands and wobble their heads in Latin-American emphasis, each anxious to make himself





Photographs by Jacob Gayer

VOTIVE OFFERINGS IN THE IGREJA DA PENHA, A POPULAR SHRINE NEAR RIO

These objects, placed in the church by the pious, indicate the nature of the supplicants' misfortunes and are symbolic of answers to prayer.

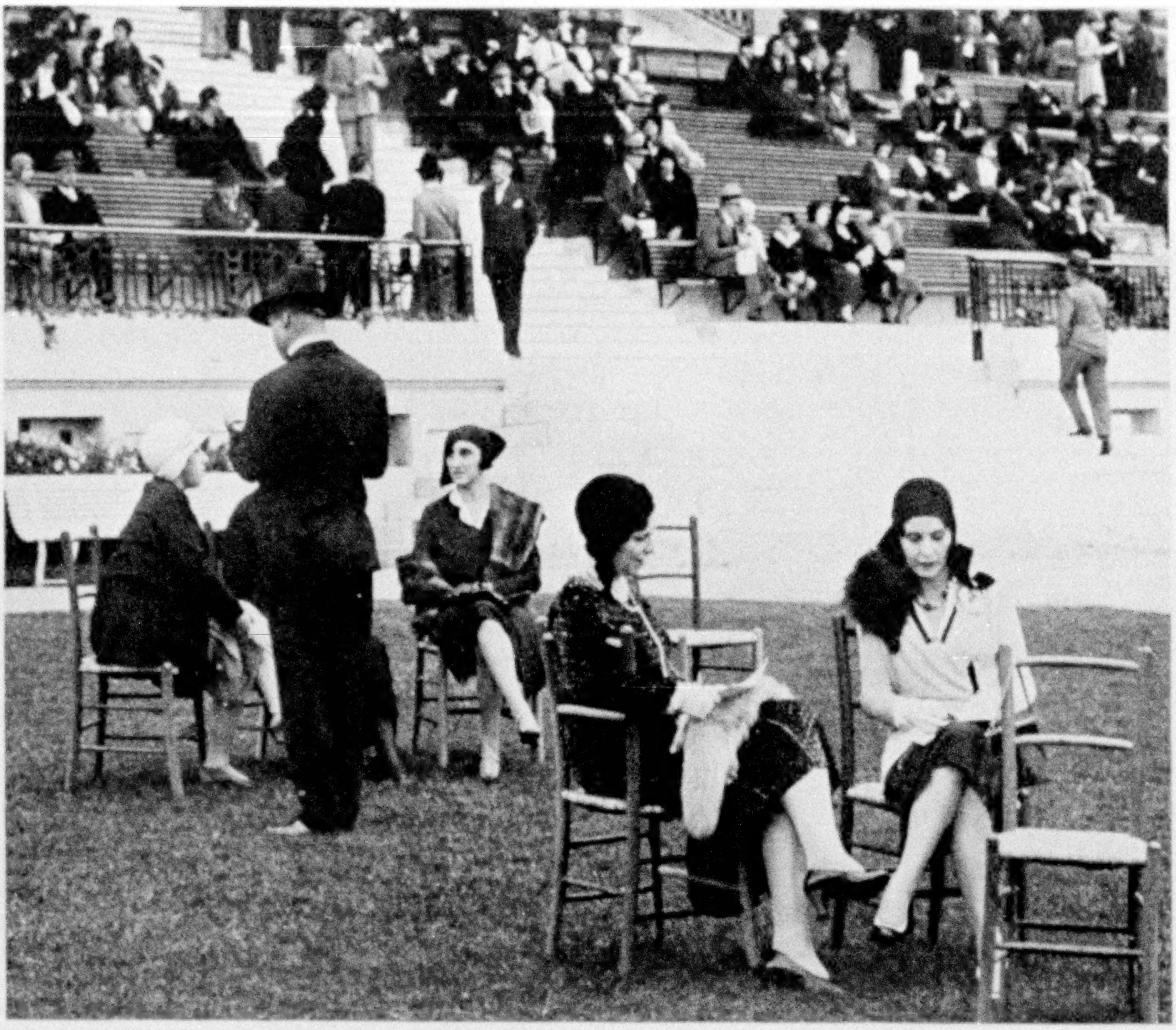
AS IN BERLIN, SO IN RIO, MANY GRAVEN IMAGES ARE RAISED UP TO PLEASE THE PEOPLE

Elsewhere in the city sculptures similar to this figure of Dog the Protector portray Twilight, The Dance, and The Four Seasons.

Photographs by Jacob Gayer

AVENIDA RIO BRANCO IS RIO'S FIFTH AVENUE

BEFORE HEAVY BRONZE DOORS IN RIO



Photograph by Jacob Gayer

AT THE RIO JOCKEY CLUB, RACES ARE NOT THE ONLY ATTRACTION

heard. Passing by, you hear scraps of talk on every theme, from the coffee crop and the São Paulo snake farm to the identity of the pretty girl who just went by in a roadster.

A weekly magazine, a group of Rio chain stores, a busy plantation upcountry, all claimed the time and interest of the editor of a popular journal on whom I called; yet he calmly closed his desk, ordered his motor car, and became my guide, philosopher, and friend that I might understand Rio.

Once we tinkled the bell at a famous monastery whose ancient walls tower over the busy city. A slat was raised from a peephole, a friendly eye beamed. The big bolt-studded door swung open and a smiling old monk in a brown robe and with bare feet let us in. Lay brothers from Holland these men were, and we talked in German. They showed us the age-old treasures of the monastery, including a magnificent library, with many huge brass- and leather-bound books centuries old. Some of these rare and valuable books, unhappily, are being slowly destroyed by insects.

Stored in dark, silent chambers are gilded standards, canopies, and the ornate figures of saints. Time was when all these objects were carried in parade through Rio streets on church fiesta days, but now traffic is too congested. In a cool refectory with a high ceiling and airy windows that opened through thick, earthquake-proof walls to a magnificent view of the city, we saw the brothers at lunch, sitting on wooden benches about a long board. The soup smelled good.

BRAZIL MAKES A LARGE SHARE OF HER MANUFACTURED GOODS

"Other nations do not realize how fast Brazil is becoming self-supporting," said my editor friend, as we quit the tranquil

Photograph by Jacob Gayer

GRACEFUL BAMBOOS BEND OVER WINDING PATHS

Covering hundreds of acres and numbering many thousands of different trees, plants, and shrubs in its riotous exhibit, few plant sanctuaries anywhere can compare with Rio's Botanical Gardens. Besides giant trees from Amazon forests, with the many vines, parasitical plants, and orchids that grow on them, one may also find here such interesting exhibits as the clove, nutmeg, and cinnamon trees and the milk-giving "cow" tree (see, also, page 732).

hilltop monastery and descended again into the hurly-burly of Rio's crowded streets.

"Our prosperity depends less on import and export trade than does that of most other Latin-American lands, because we are coming to make here, at home, so many of the things we use. This new chain of five-and-ten-cent stores, lately started here in Rio, gives an illuminating cross-section of our national life."

We walked into such a crowded store and mingled for some time with the customers. Women and children thronged at the bargain counters, just as in any similar store in any North American city. "From dolls to dishes, from neckties to noodles," said my host, "80 per cent of all these things are made in Brazil. We, too, have a protective tariff; that's why some of your best-known manufacturers of such things as motor cars, trucks, cement, electrical goods, and food products have started branch plants and factories here."

Sumptuous clubs, glittering shops, exclusive tea rooms, the chattering noonday crowd that strolls in famous Rua Ouvidor, where no vehicles are allowed, we saw them all. And, resting in a café, he raised his cup and taught me an old Rio toast: "To our own good qualities," he said, "and your response is: 'Which indeed are not a few!'"

Back again in his editorial office, I saw on his wall a water color of a charming nook in Rio. "That is a good picture," I said. "The painter has caught all the

Photograph by Jacob Gayer

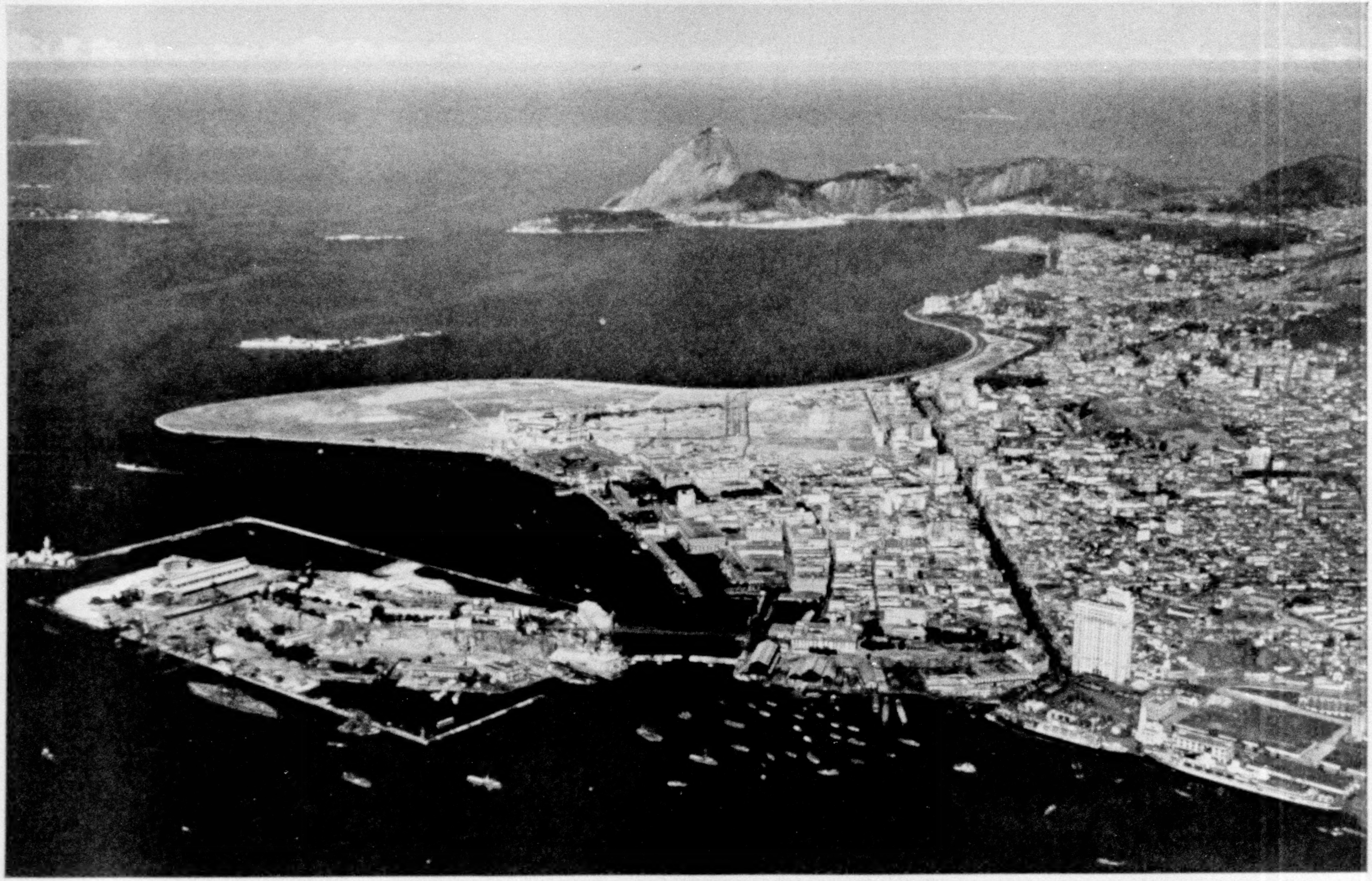
HORSE-RACING IN BRAZIL DRAWS BIG CROWDS

Betting is general, especially in the pari mutuels, but, compared with race meets in the United States, Rio racing crowds seem less enthusiastic; they relax, smoke, gossip, and visit with friends, but do little shouting or cheering. The beautiful, hill-fringed track of the Rio Jockey Club, with its odd, overhanging grandstand roofs.

Photograph by Jacob Gayer

RIO AND ITS BAY VIEWED FROM THE SUMMIT OF CORCOVADO

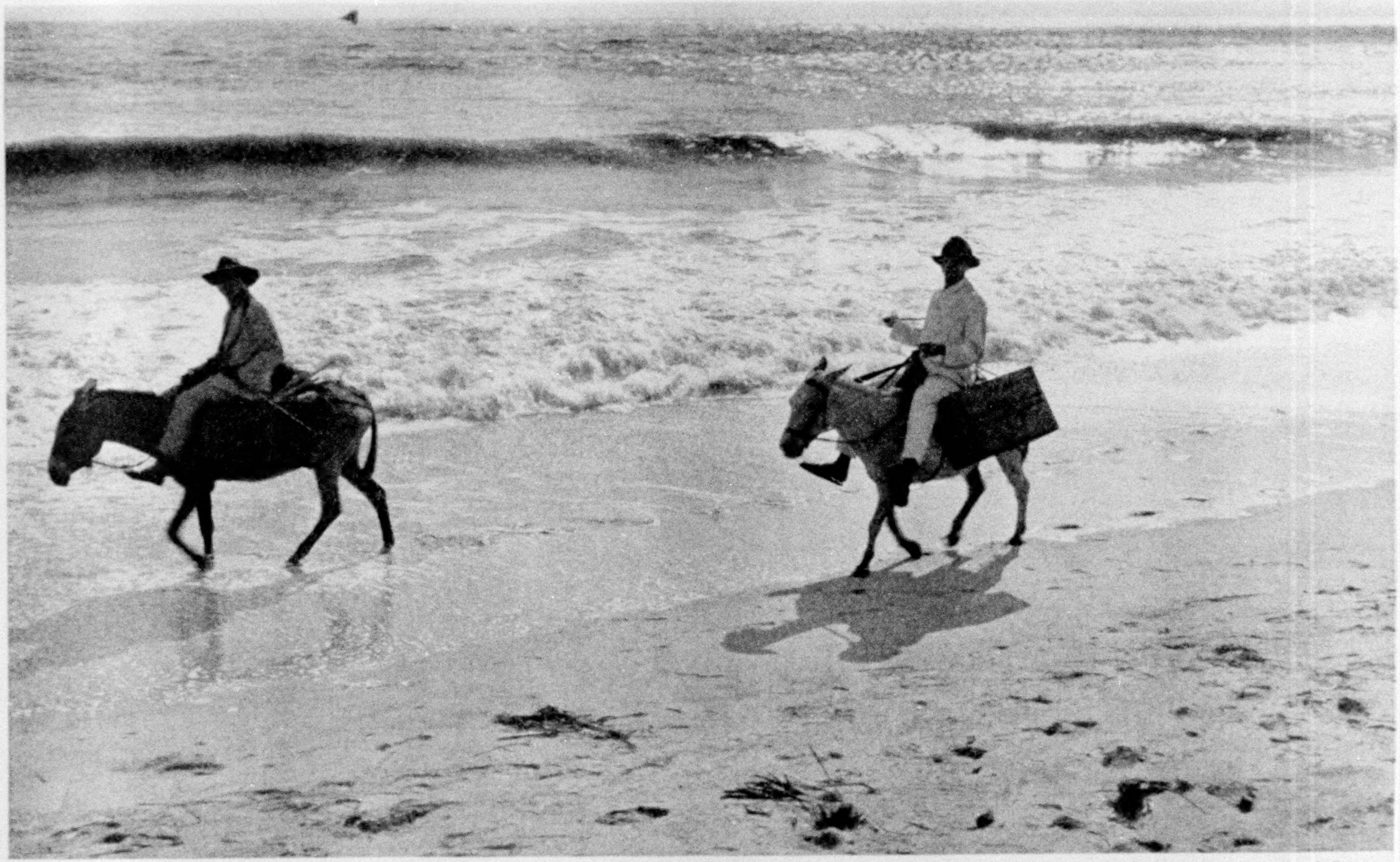
To reach this high point, most sight-seers come from the city by tram, although a motor highway now climbs far up under the towering peak, on whose summit a giant statue of Christ is being erected. Sugar Loaf appears in the distance, to the right.



Photograph by Albert W. Stevens

THE AVENIDA RIO BRANCO CUTS A WIDE PATH THROUGH THE HEART OF RIO

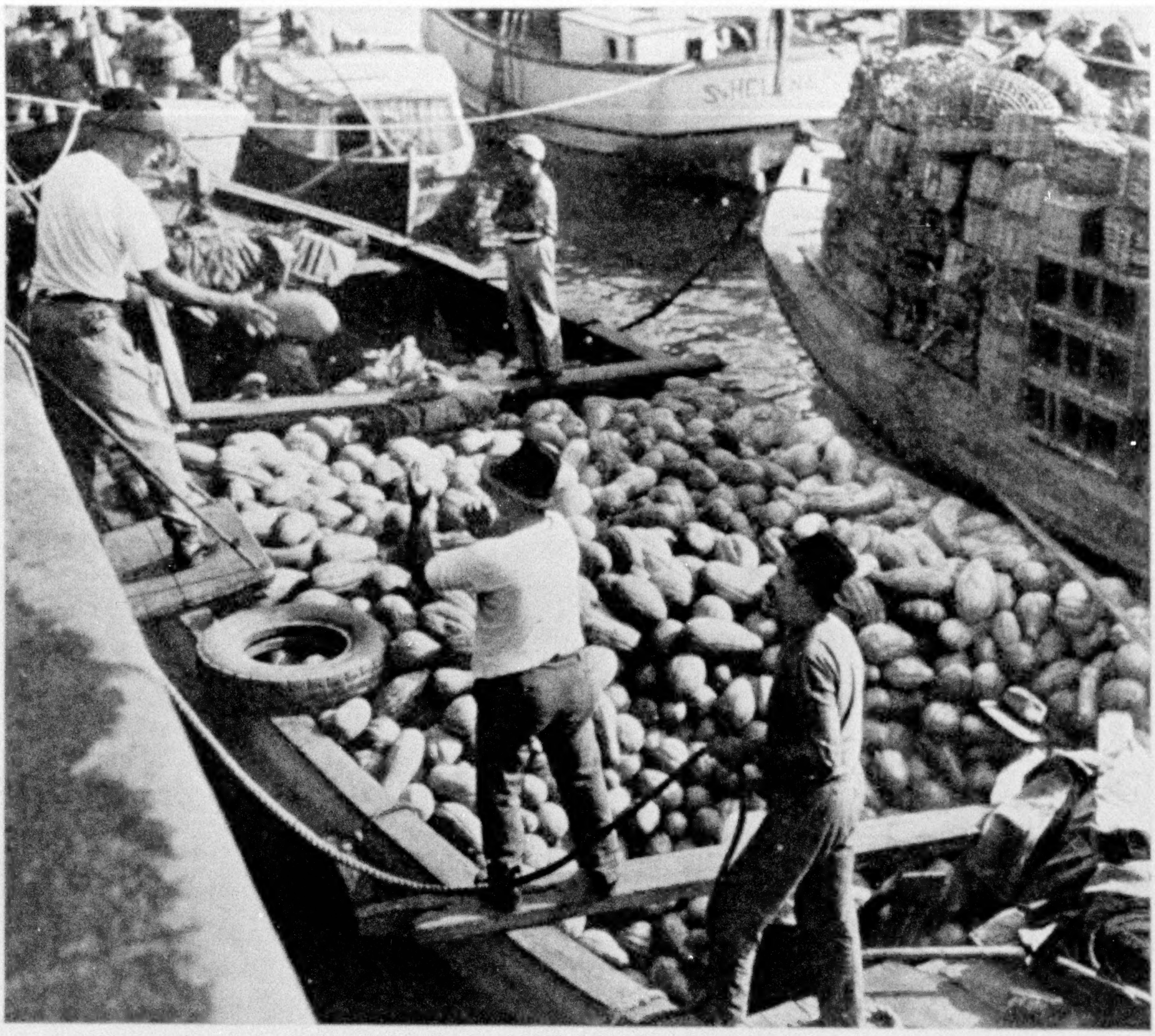
In the left foreground are the Navy Yard, steamer docks, and customhouse. The skyscraper home of *A Noite*, a popular Rio daily, rises in the right foreground. At its other end the avenue merges with the famous beach drive, the Beira Mar, or "Edge of the Sea."



Photograph by Jacob Gayer

BETWEEN BRAZILIAN COAST TOWNS THE BEACH OFTEN PROVIDES A CONVENIENT HIGHWAY

For hundreds of miles below the delta of the Amazon, as from Maranhão (São Luiz) around to Natal and down toward Bahia, a travel stream trickles along the hard, smooth beach. Often one sees long strings of oxen hauling carts, men on mules, and herds of live stock using the beach as a road.



Photograph by Jacob Gayer

BRAZIL EATS AMAZING QUANTITIES OF FRUIT

The men are unloading melons at Caes de Pharoux, in Rio de Janeiro.

bright light and color of morning sun on a Rio flower garden." Months later, when I got back to Washington, I found the painting on my desk with a whimsical note from that editor. The picture now hangs in the library of the National Geographic Society.

NORTH AMERICANS ARE POPULAR IN RIO

"Rio likes Americans," this editor told me, "because we have a similarity of ideals and because we share your sense of humor. We even translate and print your jokes! If you want to know whether we like your movie stars, try to get a seat in any cinema after 5:30 when a new comedy or romance made in Hollywood is showing.

"Some of your Secretaries of State in years past were entertained in Rio. And Mr. Roosevelt, when he came to explore the rivers and jungles, aroused as much popular enthusiasm as if he had been our own."

Nowhere, from the Rio Grande to Cape Horn, is the visitor from the United States more welcome than in Rio. Whether he comes as tourist, salesman, scientist, diplomat, artist, student, teacher, resident engineer, merchant, or delegate to an international highway conference, he soon senses that Brazilians hold our country in high esteem.

Between the two capitals, Rio and Washington, friendly diplomatic intercourse has been unbroken for a hundred years. When we entered the World War, President Braz of Brazil said in his message to Congress: "With our elder brother, the United States, at war, it is impossible for Brazil to remain neutral."

The great newspapers of Rio de Janeiro, *A Noite, Jornal do Commercio,* and *Jor-*

Photograph by Jacob Gayer

SONGBIRDS AND POULTRY VIE FOR ATTENTION IN THIS SECTION OF RIO

nal do Brasil, keenly edited and widely influential, give much space to United States news, and among Rio journalists are several who have traveled or resided here. To-day, also, our leading news agencies have built up an extensive two-way service with Rio. So now our own daily papers not only serve the North American people with quicker and more complete news from Brazil, but, through our news agencies established in Rio, a broader and more constructive volume of North American news is served to Brazilian papers. Before this invaluable aid to international understanding was so well developed, most cable news to Brazilian and other South American newspapers came from Europe, particularly from Paris.

Paris, of course, is still the world center of all art, thinking, and culture to Rio, because educated Rio itself can read, think, speak and sing in French as readily as in Portuguese. And Paris dictates its styles. Look at the beauty parade on the luxurious Avenida Rio Branco any fine afternoon; its gay, fashionably dressed throng at once suggests the French capital.

Rio—rich, leisurely, and at ease—is not "Americanized" in dress, manners, or in methods. Probably she never will be, for here a new race is in the making—a racial amalgamation new to the world, possessing unique social, industrial, and cultural possibilities.

But Rio is tolerant and wise. From us, as from Europe, she takes what she can

Photograph by Jacob Gayer

LANDSCAPE ARTISTS AND ARCHITECTS WORKED WONDERS WHEN NEW RIO EMERGED FROM THE OLD TOWN OF SLUMS AND SWAMPS

Hills were blasted and shoveled away and water fronts extended by fills, so that now many areas of the modern city stand on made ground. Shady motor drives and rows of palms border a Rio canal.

Photograph by Jacob Gayer

VICTORIA, FOUNDED IN 1535, SNUGGLES IN A LAND-LOCKED HARBOR

Railways tie the venerable city with Rio, 270 miles to the southwest, and with the important mineral regions of Minas Geraes. With its narrow hill streets paved with cobblestones and Lisbonlike old buildings, it links modern Brazil with colonial times.

Photograph by Jacob Gayer

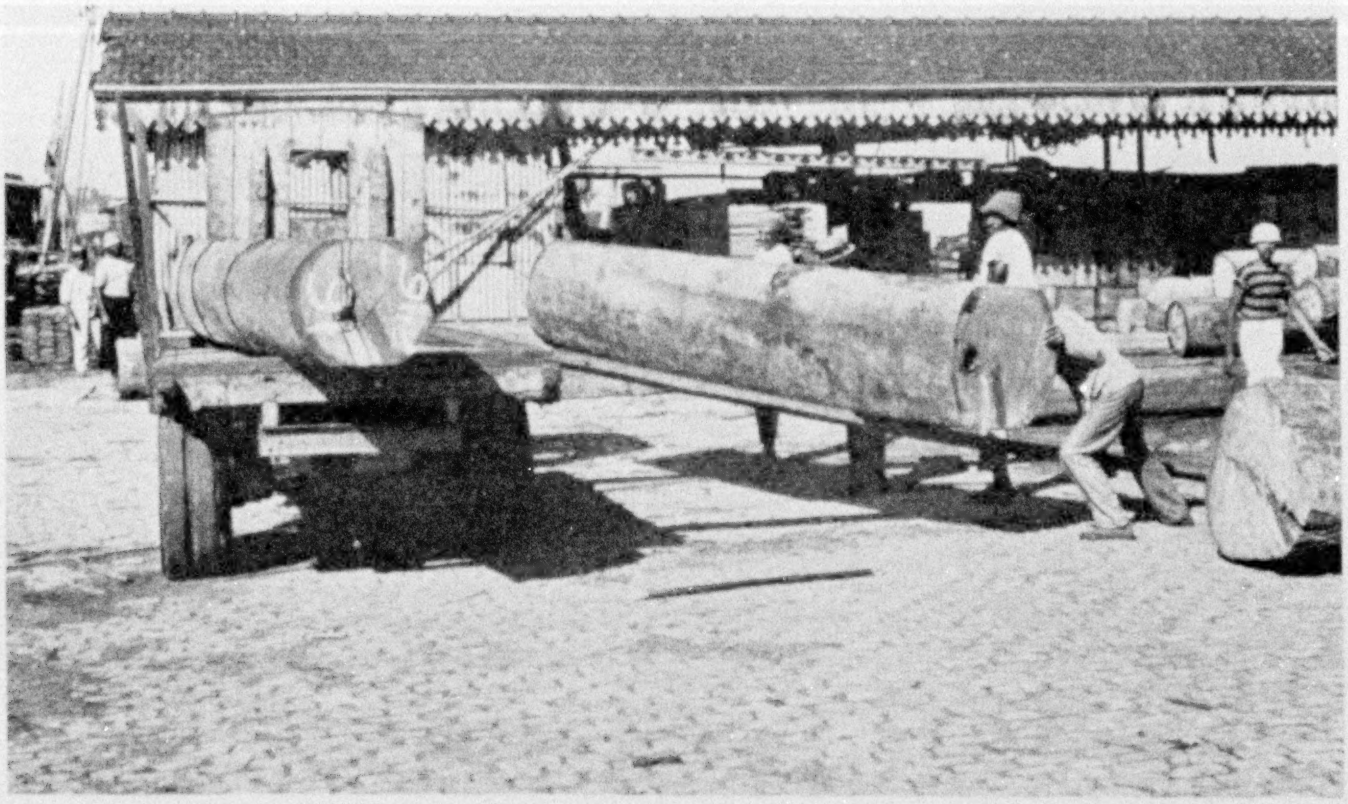
THE BULK OF BRAZILIAN TRADE IS WATER BORNE

At Pará hundreds of such boats, with carved and painted prows and colored sails, bring fruit, vegetables, pigs, poultry, and other country produce to market each morning. Many housekeepers and servants buy direct from the boatmen, thus eliminating the middleman. The front of a market building is seen at the right.

use, whether it is ideas or goods. This is fair play among nations. Brazil buys about one-fourth of all her imports from us, and we buy perhaps 45 per cent of all she exports. If she feels that her young men can learn more about engineering, agriculture, or dentistry in the United States than in Europe, she sends them here to school. If she thinks North American capital and managerial talent can improve her public utilities, she invites their aid; and, coöperating vigorously, she sets her public-health officials to work side by side with American "Rockefeller doctors" in yellow-fever control.

"Some persons seem to think that trade between nations is solely for money-making purposes, and that it is, therefore, more often a source of friction than of good will." So said President Hoover when, in 1928, he visited Rio on his pre-inauguration tour around South America and was the guest of the President of Brazil. "Yet, as a matter of fact, economic interchange is a part of the whole of our mutual civilization.

"I know of no better instance of the economic mutuality of nations than that of Brazil and the United States. A large part of Brazil lies in the Tropical Zone and possesses unlimited opportunity for tropical productions. My country is wholly in the Temperate Zone. With every advance in human comfort and luxury, with every step of invention, the exchange of products of the Tropical and Temperate Zones which neither can themselves produce becomes of more and more vital importance.



LUMBERMEN HAVE BARELY SCRATCHED THE VAST FOREST RESOURCES OF BRAZIL

Only along river fronts and the few short railways which venture timidly into the deep wooded areas has man's ax yet been heard. Logs from the Amazon, at Pará.

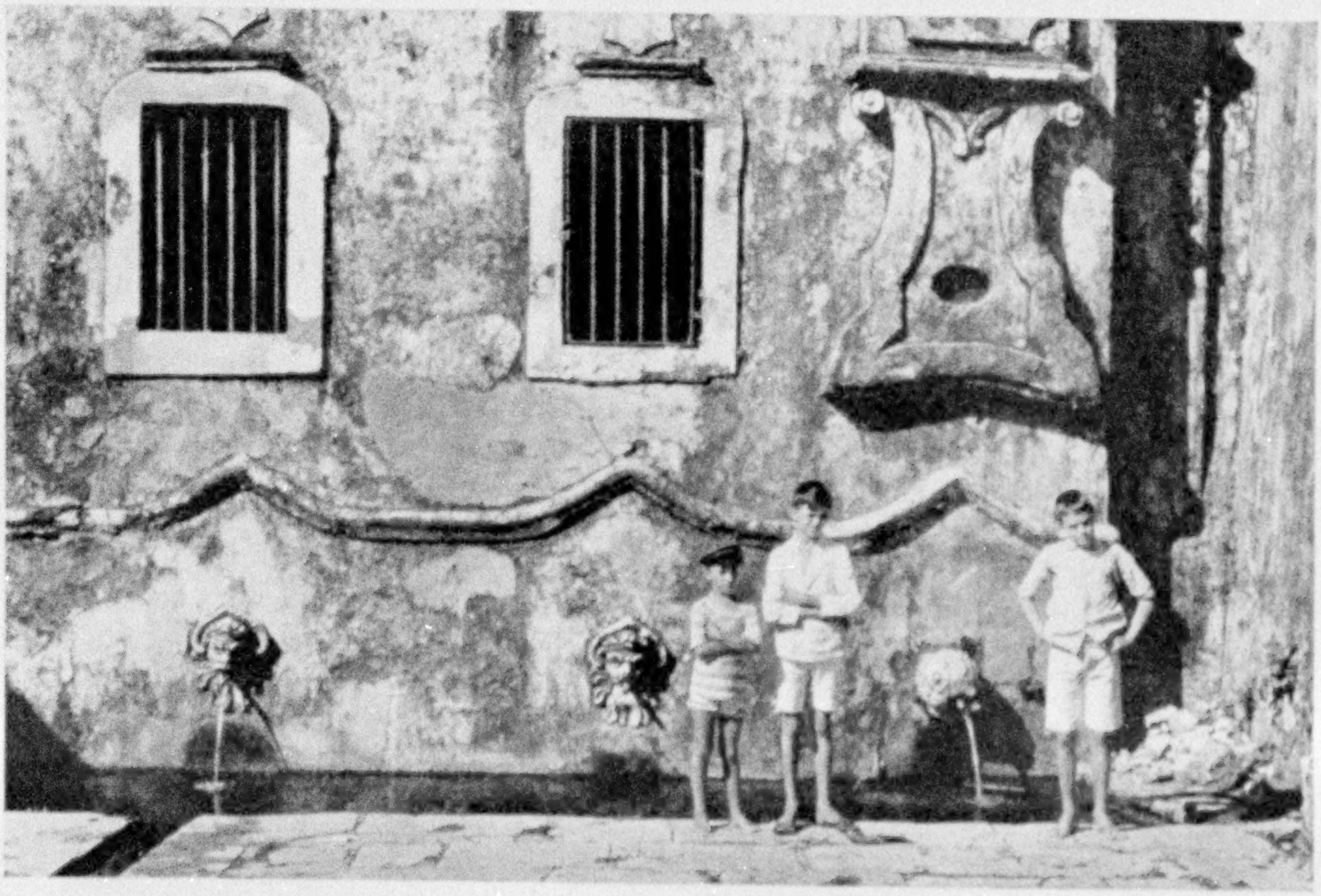
Photographs by Jacob Gayer

CACAO BEANS, SOURCE OF CHOCOLATE, ARE DRIED IN THE SUN

The beans are first "danced" out of their big pods by barefoot blacks, then dried and sacked. This plantation is near Ilhéos, Brazil. The flat roofs in the background run on rails and are hauled out over the drying beans if rain falls.

ANY MOPS, ANY BROOMS, ANY BASKETS TO-DAY?

Peddlers are not so numerous in Brazil now as in former years. Not only has a national "made-in-Brazil" policy developed many home-manufacturing enterprises, but more and better retail stores in cities and towns have greatly improved the distribution of goods and merchandise.



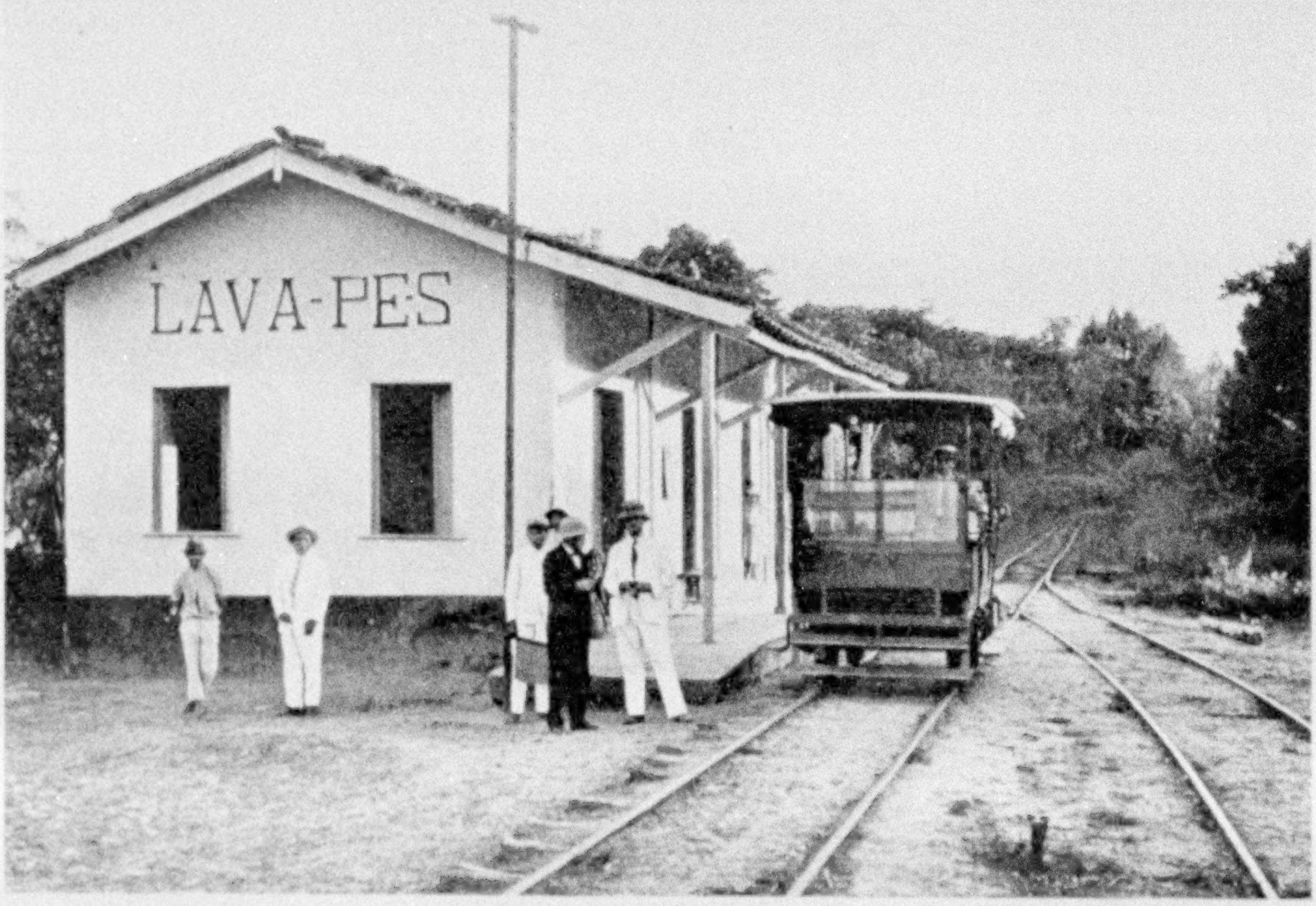
Photographs by Jacob Gayer

AN OLD FOUNTAIN AT MARANHÃO, ONE OF THE EARLY SETTLEMENTS IN BRAZIL

Relics and ruins of Portuguese occupation abound in Maranhão (São Luiz). Long the haunt of slavers, it is now a progressive, much-modernized trading port.

BAGS OF VEGETABLE WAX READY FOR EXPORT FROM CEARÁ (FORTALEZA)

In making phonograph records, floor polishes, carbon papers, insulators, and certain chalks, the United States consumes each year tons and tons of imported vegetable wax. Much carnauba wax comes from Brazil.



Photographs by Jacob Gayer

THE TINY TOWN OF LAVA PES, OR "WASH YOUR FEET," ON A JUNGLE RAILWAY

The line leaves the coast town of Ilhéos for the tree-covered cacao country. From this region comes a large share of the world's chocolate beans (see illustration, page 757).

Photograph by Jacob Gayer

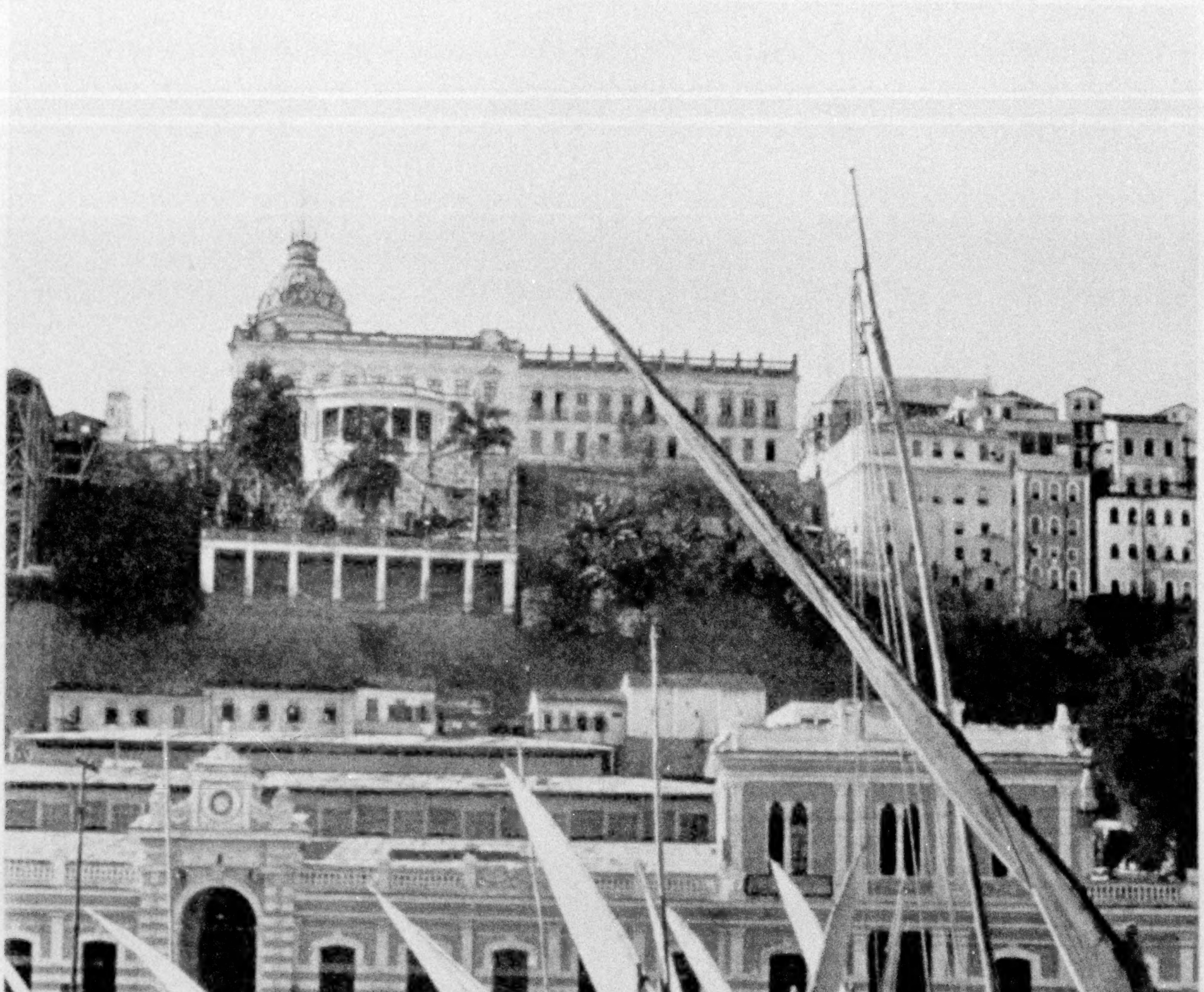
FISHERMEN LAUNCHING A "JANGADA" AT CEARÁ (FORTALEZA)

On these rude rafts, made by splicing four or five logs together, stepping a short mast, and running up one sail, two or three men venture far out to sea. From the mouth of the Amazon well down to Rio, planes flying along the coast pass over hundreds of such craft. To hold the fish, caught with drop-lines, a wicker basket is lashed to the mast. Clumsy as they appear, the Brazilian fishermen navigate these rafts with skill and ease.

"A century ago our countries could and did live a more primitive life, without the exchange of products of the Temperate Zone for coffee, rubber, and a score of other articles. To-day, however, but for the products which we exchange, not a single automobile would run, not a dynamo would turn, not a telephone, telegraph, or radio would operate; a thousand daily necessities and luxuries would disappear. In fact, without these exchanges of commodities huge masses of humanity who have now become dependent upon an intensive and highly attuned civilization could not be kept alive. . . . Therefore let no one think that international trade is but the noisy dickering of merchants and bankers; it is the life blood of modern civilization."

WHERE RIO STANDS ON THE MAP

Run your finger down a meridian and you find Rio due south of Cape Farewell,



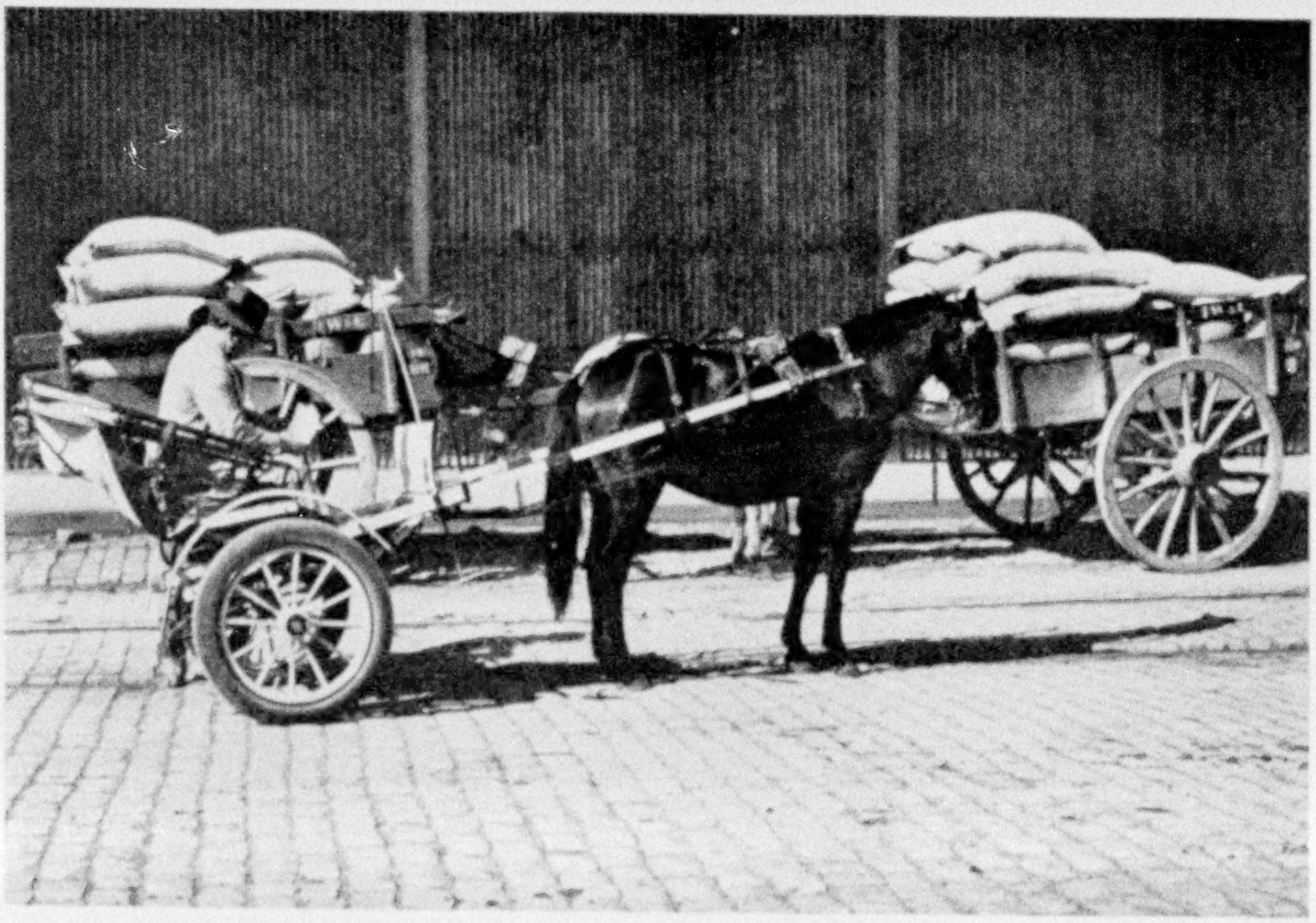
Photograph by Jacob Gayer

HIGH COASTAL CLIFFS DIVIDE BAHIA INTO "UPPER" AND "LOWER" TOWN

Customs, warehouses, banks, consulates, and shipping offices occupy most of Lower Bahia, which stands along the water front. In Upper Town are the churches, schools, hotels, theaters, Government buildings, and residences. Lateen-rigged boats are characteristic of Bahia.

A MARKET PLACE IN PARÁ, GREATEST CITY ON THE AMAZON

The strangling jungle crowds close upon Pará. Standing almost on the Equator, its market life is astir at daybreak to avoid the heat of later hours.



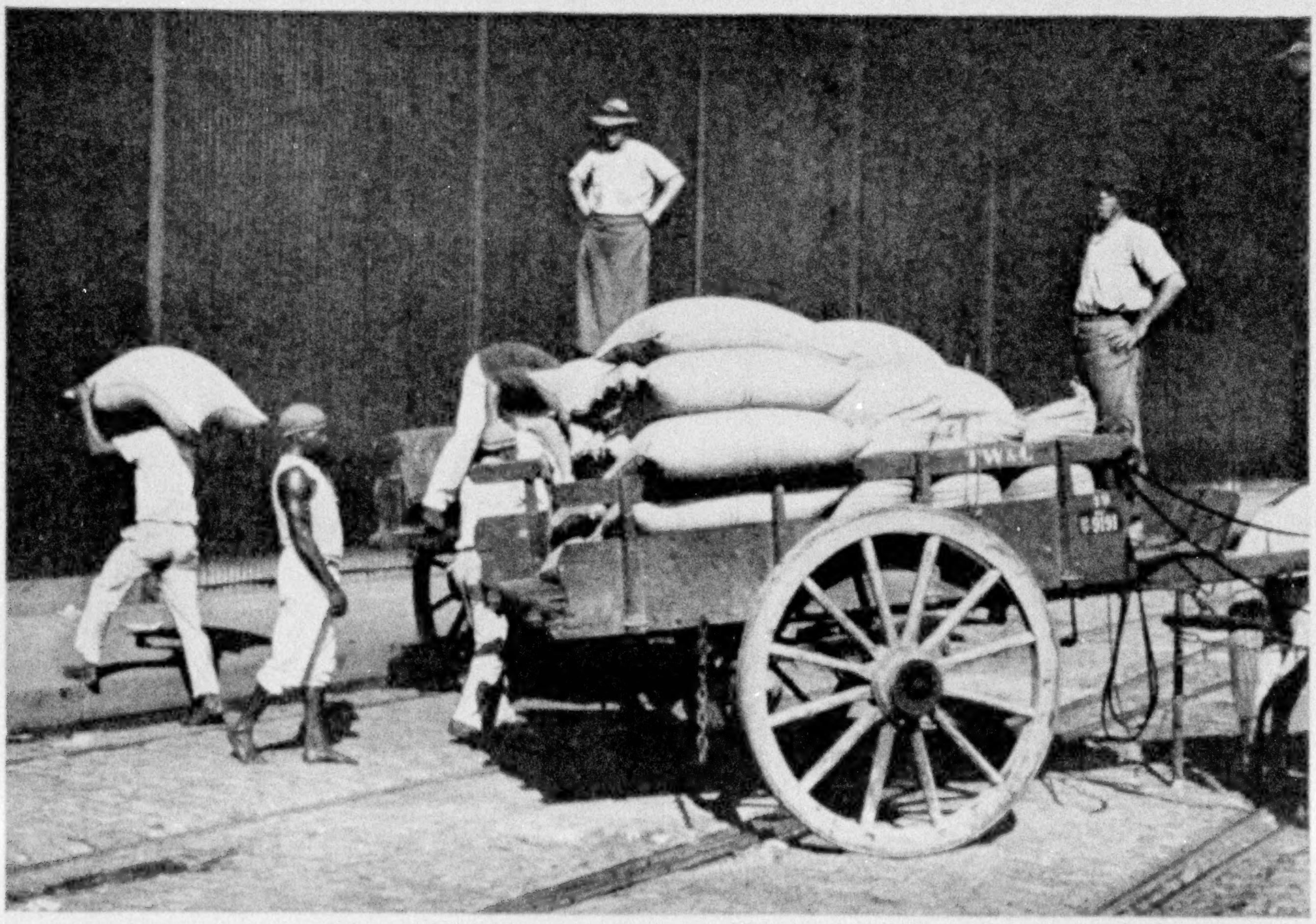
Photographs by Jacob Gayer

AN ODD SULKY WITH BUGGY TOP, USED IN RIO, SANTOS, AND SÃO PAULO

Built for business, not for pleasure, these sturdy horse-drawn vehicles gain easy access to crowded wharf and warehouse districts. The driver is overseeing a coffee shipment at Santos.

THE GATEWAY TO THE WORLD'S GREATEST COFFEE LAND

Between the months of August and January, in particular, the streets and warehouses of São Paulo's seaport terminal, Santos, throb to but one idea—coffee.



Photographs by Jacob Gayer

SANTOS HANDLES MILLIONS OF BAGS OF SÃO PAULO COFFEE

With export of such importance, the port's dock facilities, warehouses, electric cranes, elevators, and railroad transportation from the interior must be, and are, the most modern.

Photograph by O. Achtschin

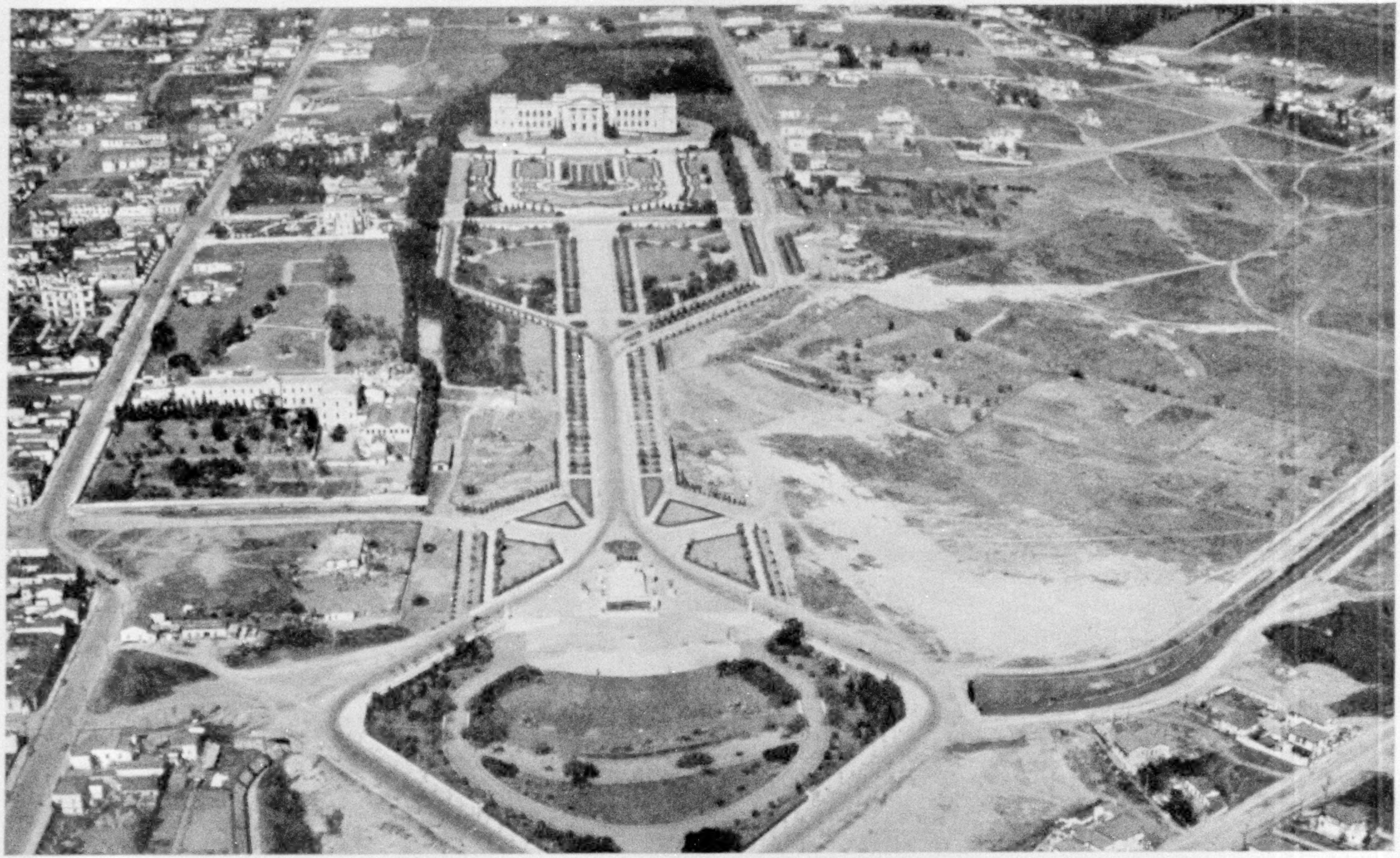
RESORTING AND RESACKING COFFEE AT SANTOS

After the coffee is packed in bags weighing 132 pounds each, it is loaded on ships by means of belt conveyors. Eight or ten thousand sacks can be shot into ships in an hour, depending on the ability of the stevedores in the hold to stow the cargo.

Photograph by Jacob Gayer

FOR NORTH AMERICAN CHRISTMAS DINNER TABLES: A WAREHOUSE FLOOR AT PARÁ COVERED WITH HUSKED BRAZIL NUTS

Gathered by Indian and other nut hunters from wild trees scattered over vast areas in the Amazon Valley forests, these nuts are first extracted from the big pod in which they grow and then sent down river to shipping ports.



Photograph by Albert W. Stevens

WEALTH AND TASTE HAVE ENDOWED SÃO PAULO WITH BEAUTIFUL PARKS AND PUBLIC BUILDINGS

In the central background is the Ypiranga Museum, built on the spot in the suburbs where Brazil proclaimed her independence from Portugal in 1822. It contains notable ethnographical and zoölogical collections. In the central foreground is the Independence Monument.

Photograph by Albert W. Stevens

AËRIAL VIEW OF SÃO PAULO'S BUSINESS SECTION

The tall structure in the left center is the new Martinelli Building, occupied chiefly by lawyers, with an ornate motion-picture theater on the ground floor. Boa Vista viaduct runs up from the lower right corner. This picture shows the so-called "Triangle District."

Photograph by T. Preising

SÃO PAULO IS A LOS ANGELES OF THE SOUTH

As to climate, wealth, and location, conditions here are similar to those in the coffee city's North American sister. Wealth, both individual and official, is reflected in many of the streets and buildings.

Greenland. Our Alaska almost touches Asia; but South America, in the vast hump of Brazil, pushes out into the Atlantic till it is 2,600 miles east of New York City. Fly or steam south from the Statue of Liberty for Rio de Janeiro along the West Indian routes and you must ride close to 7,000 miles to get there—a voyage that would carry you from New York to Tokyo, were you flying west. This isolation from the main east-and-west tourist trails around the world leaves Rio miles off the beaten track.

It is not only remote from other great world cities, barring Buenos Aires, but, because of Brazil's enormous area and lack of adequate railroads, its capital is also far remote from many of its own cities and important States. From Manáos, on the upper Amazon, the 3,500-mile boat trip to Rio may require 10 or 15 days, depending on connections.

Think how long it took a California delegate to reach Washington in stagecoach days and you can imagine how much mileage Brazil gets out of a senator who comes, let us say, from the State of Pará or Amazonas! And what a long, long trail for an emissary from far-away Acre Territory, on the Peru and Bolivia boundaries! Our vast net of motor highways and railroads pours more than 4,000,000 Amer-

Photograph from E. M. Lawton

THE COFFEE-PICKING SEASON BEGINS IN MAY

Care of the trees on a São Paulo plantation is usually parceled out, in lots of 1,000 trees, to laborers who live on the estate. A family consisting of man and wife and two children of ten years of age and upward can normally, between seasons, take care of from eight to ten thousand coffee trees.

ican sight-seers a year into Washington, yet comparatively few Brazilians ever see their magnificent capital.

RAILROADS COME TO LINK THE CAPITAL WITH THE HINTERLAND

But slowly, inevitably, Rio reaches out, with new railroads and the beginnings of highways, to link herself with her vast, rich back country. No more scenic and speedy highway exists than the new boulevard out to Petropolis; and the motor highway southwest to São Paulo, winding from humid lowlands up through the fragrant green-hill plantations, where tens of thousands of Italians work the coffee groves, affords a fascinating close-up of country life.

Because Brazil is developed mostly only along her coasts and some of her inland waterways, her original railway systems were not spread out like ours, to serve all her States. Instead they were planned only to bring her products to the nearest water port and to receive and distribute imports in these same regions. In early days separate railway nets grew out from such ports as Pernambuco, Bahia, Rio, Santos, Porto Alegre, and Rio Grande do Sul. Gradually, however, the need for

Photograph by Dr. Gilbert Grosvenor

SÃO PAULO CAN TRADE IN SEVERAL LANGUAGES

The city is so thoroughly cosmopolitan that it can hardly be said to be typically Brazilian. Italian, French, English, German, and Arabic are spoken almost as much as the native Portuguese, and among the laboring classes even this is a sort of patois admixture of something which is neither Italian, Spanish, nor Portuguese, but bears the imprint of all these tongues.

north-and-south rail service grew, so the Rio system was pushed north to tie up with the port of Victoria, in the State of Espirito Santo. Likewise it was extended south, linking up not only with the São Paulo and Rio Grande do Sul systems, but also with Uruguay; so that now one may ride from Victoria down to Montevideo.

Of course, as yet much of the country's interior produce comes down rivers in dugouts and small river craft or is hauled for miles through mud or dust in creaking oxcarts; but steadily, year after year, distances to the back country dwindle as transport improves.

In the romantic history of Brazil, Rio has staged many eventful dramas. It saw 700,000 slaves freed by the law proclaimed May 13, 1888. Five gala days of celebration followed this far-reaching step, which spelled the doom of the Empire. There was still much affection felt for the Emperor Dom Pedro, as a man; but the people wanted a republic. Their leaders, Deodoro da Fonseca, Floriano Peixoto, and Benjamin Constant, were to Brazil what patriots like Washington, Jefferson, and Patrick Henry were to us.

Rio awoke one morning in November, 1889, to find rebels in control of all the

Photograph by Jacob Gayer

A SANTOS "NEWSIE" DISPLAYS HIS WARES ON THE SIDEWALK

Photograph by Melville Bell Grosvenor

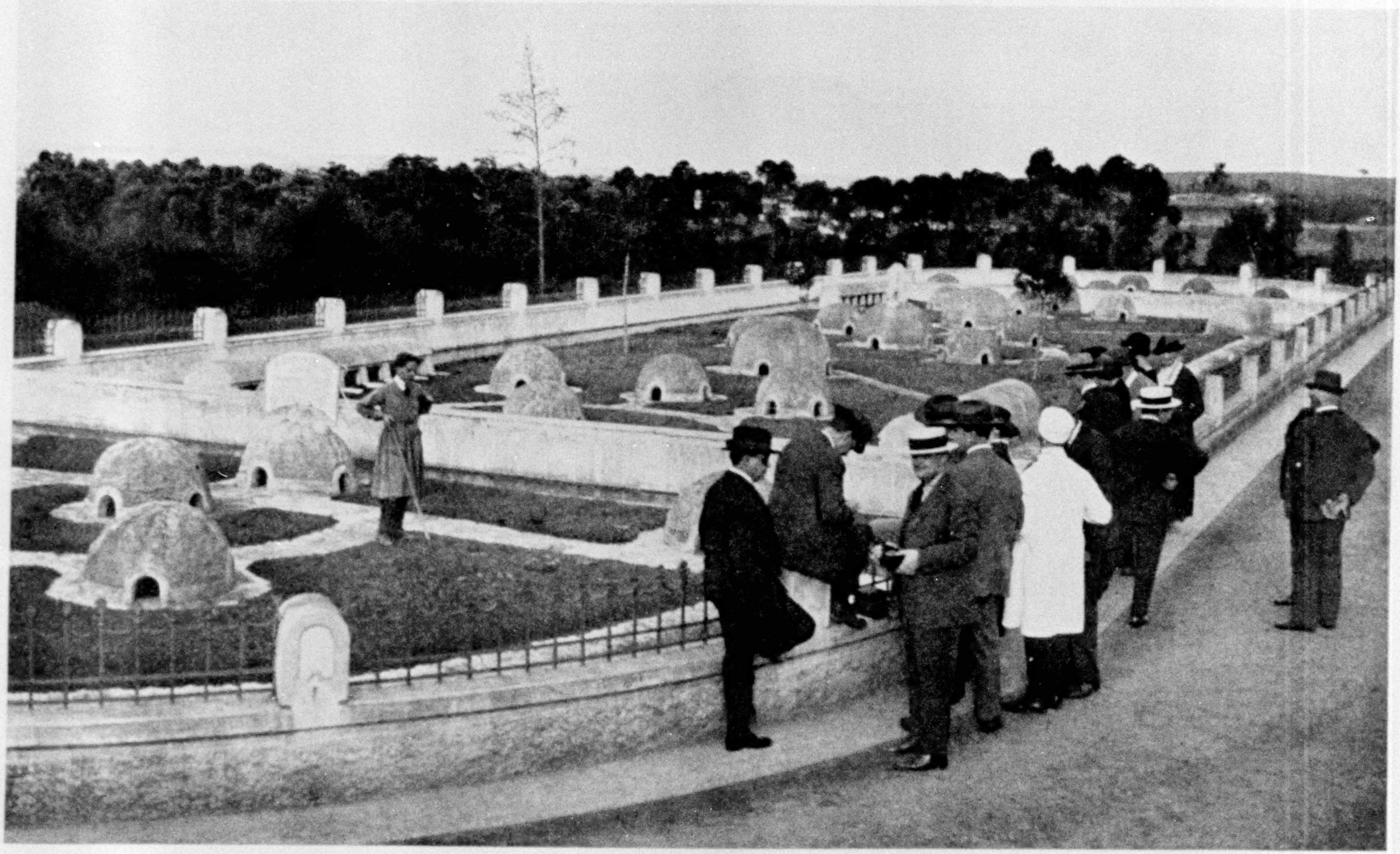
A CORNER OF SÃO PAULO POTTERY

Pots and jars in many forms, all of local manufacture, are offered for sale in these open-air markets (see, also, illustration, page 772).

Photograph by O. Achtschin

SHORTLY AFTER NOON ALL SIGNS OF OUTDOOR COMMERCE ARE REMOVED

São Paulo's permanent markets are housed in appropriate buildings, but the movable ones in some of the open sections and paved parks are in operation from early morning until noon, on certain days of each week. By 1 o'clock all signs of commerce have been cleared away and the streets and pavements flushed with fire hose.



Photograph by Melville Bell Grosvenor

POISONOUS REPTILES RECEIVE FREE BOARD AND LODGING ON THE BUTANTAN SNAKE FARM NEAR SÃO PAULO

At the Seropathic Institute, the venomous species live in a veritable little city of dome-shaped houses, green lawns, canals, and concrete walks. Each house is divided into rooms, and each snake has its own room with private entrance. Antivenin serum, from the blood of horses which have had increasingly stronger injections of virulent poisons obtained here until they are immune, is shipped to all parts of Brazil. The Institute also makes serums for various diseases, such as bubonic plague and lockjaw.

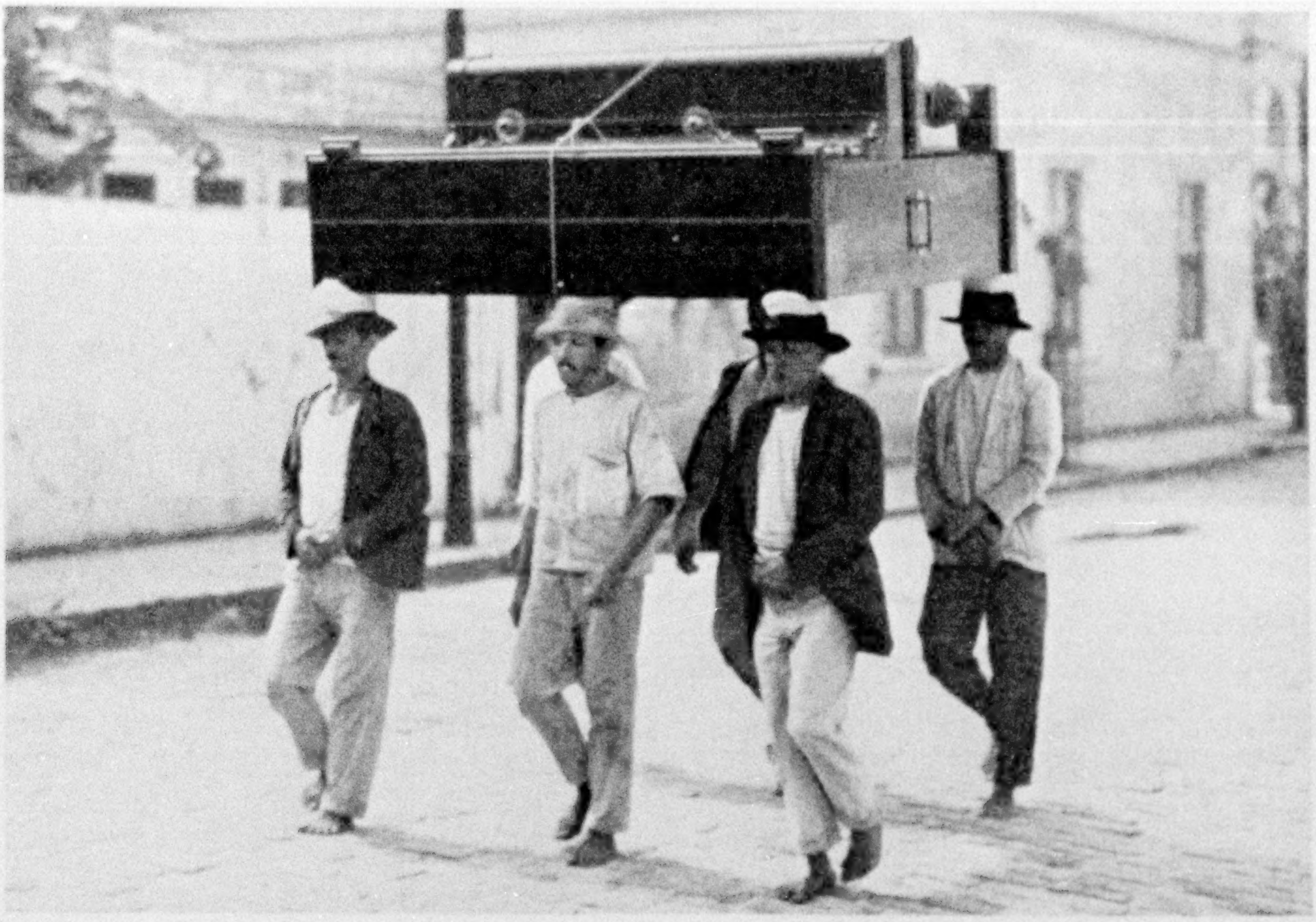
FAMILIARITY DOES NOT BREED CONTEMPT

The attendants carry the venomous snakes about on metal hooks, as this method of handling prevents the reptiles from coiling to strike.

Photographs by Jacob Gayer

BRAZILIAN SNAKES CANNOT BE BRED IN CAPTIVITY

Specimens are continually arriving at the Institute from all sections of the country. Of the more than 200 species of snakes, 16 are considered especially dangerous. Formerly, some 19,000 persons were bitten every year, and of this number nearly 5,000 would die. To-day, thanks to the efforts of the Seropathic Institute, the number of deaths has been greatly lessened, though the fight against snakes must be constantly waged.



Photograph by Albert W. Stevens

TO BE A PERNAMBUCO PIANO-MOVER IS TO BE STEADY AND UPRIGHT

Though not shown here, a seventh man worked with the six of uniform height who march under the heavy piano. He walked ahead, clearing a path and giving orders when to turn.

Government buildings, the Emperor in custody, and street crowds removing all emblems of monarchy. That day, without loss of life or bloodshed, the republic was born. Pedro II, with his family, left for Portugal, and a committee of five wrote a constitution for the "United States of Brazil," which was patterned very much after ours.

When you see modern Brazil and recall that as late as 1850 it had only 8,000,000 people, 3,000,000 of whom were in bondage, you grasp how great its progress is.

After our Civil War Brazil threw its great Amazon River system open to ships of the world. Later, coffee planting increased amazingly; now Santos has become the world's greatest coffee port. Coffee, growing mostly in the States of Minas Geraes, Espirito Santo, Rio de Janeiro, and São Paulo, has been the country's chief crop for half a century.

Liberty under the new Republic and the lure of unlimited possibilities of virgin land drew endless shiploads of immigrants from Europe. Population has grown from about 14,000,000 in 1890 to nearly 43,000,000 today. For many years, except during the World War, the annual immigration ran from 100,000 to 200,000. Newcomers, especially Italians, caused the State of São Paulo to grow with the same amazing rapidity which we have seen in the case of population in California and Texas. Through Rio, Spaniards and Portuguese have entered in veritable armies.

Porto Alegre and the farms and ranches about it are highly Germanized. In the State of São Paulo about 40 per cent of all the people are Italians.

In many Italian sections these immigrants wear their familiar Italian garb, cling to homeland customs, and peddlers even shout the street cries of Italy.

Rio, although the capital, as yet wields but vague influence over many far-away, little-known, and still savage areas. Up on the border, next to French Guiana, for example, lies a wild, watery, thinly peopled country as large as Ohio; yet it figures hardly at all in the daily affairs of the United States of Brazil. "A large portion of Matto Grosso," says one writer, "is as unknown to the authorities in Rio

Photograph by Jacob Gayer

SYMBOLIC BLESSING OF THE SEA AT BAHIA

as it is at Washington. The wildest of the wild West is still being lived there."

In other jungle areas, as between some tributaries of the upper Amazon, the same is true. The best of all governments could not change this. It is due, partly, to man's natural jungle enemies—fever, dysentery, and heat. It proves again how climate and geography may check civilization.

WHEN THE CAPITAL RELAXES

Rio does not fret over its economic affairs. It knows how to pass gracefully from work to play. On Sundays, holidays, or after office hours, the stern facts of immigration, literacy, foreign trade, and the destiny of wild tribes on the Amazon worry it not at all. Then the whole town relaxes. Races, soccer games, the movies—each lures its own group. Bathers throng the beaches, pleasure boats dot the bay or cruise across it to Nictheroy. Here many Rio families go to spend the hot weather, as Nictheroy is conveniently tied to Rio by ferryboats like those which ply between San Francisco and Oakland.

And Rio never seems bored with itself. It reminds you of a pretty girl before a mirror—wherein it differs not at all from any growing North American city, with its greeters, boosters, and million-by-1932 clubs. Merely to see their city again and again, many Rio residents habitually take evening street-car rides. You see family groups, laughing and chatting, bowing to friends passed in the street, going by tram to explore Rio. Conductors touch their caps politely. To offer a tip when paying your fare is not bad form. One tram line feels its way dizzily along the high top of an ancient, Rome-like aqueduct, whence you look down on night crowds milling through the noisy, brightly lighted streets.

Rio, as you see it now, is a new town. Scenically, architecturally, it startles you with its theatrical character. From my hotel roof, Rio's skyline resembled a string of fantastic palaces at some world's fair. I could look down on a seaside boulevard that ran from the dignified American Embassy, around moon-shaped bay fronts, to a race course with clubhouses like ancient temples in Egypt.

Paris, New York, San Francisco—all blend here. Aristocratic homes cling to

Photograph by Melville Bell Grosvenor

THIS LITTLE KID WENT TO MARKET IN SÃO PAULO

hillsides like mountain monasteries in Tibet. More French is spoken around hotels, theaters, and in intellectual centers than the average American tourist hears in Paris.

In Rio's changing architecture you read its history. Quaint sections remain, remindful of Portuguese days. There are narrow streets closed to vehicular traffic, and some with old-fashioned names such as "Pull-the-Teeth Street," where old men peddle live chickens in panniers borne by belled mules.

But the conspicuous phase of Rio, especially when you approach it via the small, backward coast towns from the Amazon Delta southward, is its bright, spotless newness. Vast fortunes have come in recent years from real estate. Skyscrapers rise to challenge the hills and plague the souls of artistic conservatives. I found the American commercial attaché in a 22-story building put up by one of Rio's 15 dailies. From his window you see the bay, with big ships from everywhere, seaplanes coming and going, and many war craft of the Brazilian fleet, whose personnel is trained by a United States naval mission of 35 officers and men, who give their dash of color to the local North American colony.

RIO IS AS GORGEOUS BY NIGHT AS BY DAY

And the Bay of Rio at sunset! Serrated blue hills sawing into golden skies; boats etched against white beaches; shadowy ripples sweeping the gun-protected steamer lanes between fortified hills; then endless arc lamps bursting into blaze, making Rio as gorgeous by night as by day. If it stood on the beaten travel trail around the world, tourist hordes would swamp it!

But trade, not tourists, make Rio great. It is the capital of a nation that embraces nearly half of all South America in area and even more in population.

It was barely dawn when I reached the water front on the morning I left Rio. I smelled fruit and dried meat and heard the mumbling voices of market men, the cackling of poultry, and the grunts of pigs, as vague forms moved in the dim light. At last I found the launch that was to take me out to my seaplane, and stowed my bags and typewriter. The pilot and mechanics were already out on the plane. I could hear them in the dark, warming up the motors.

Photograph by Jacob Gayer

SANTOS, LIKE CALIFORNIA, APPRECIATES BAHIA ORANGES

Agricultural history was made in 1873, when a woman in Riverside, California, received two small orange trees from the horticulturist of the United States Department of Agriculture. These were of the Washington navel variety and had been propagated in the Department's greenhouses in Washington from small trees received in 1870 from Bahia, Brazil. To-day, California annually harvests millions of dollars' worth of this luscious fruit.

"Why don't we start?" I asked the launch skipper, a short, mustached Brazilian in an Apache cap, a white scarf about his neck, and a cigarette hanging to his lower lip as he talked.

"We await the mail truck," he explained.

"But the plane pilot is carrying our breakfast," I complained. "I'm hungry."

From under a seat he brought forth a paper sack containing his own simple lunch, and pressed it on me with easy Portuguese courtesy.

"The Senhor is from the United States of North America, is he not? . . . Ah, I knew it by his rubber heels, the way he eats the orange, and because he carries the small typewriter! You North Americans please me very much. I have worked my way to New York on boats."

From somewhere he dragged forth a portable talking machine and put on a record, "The Stars and Stripes Forever."

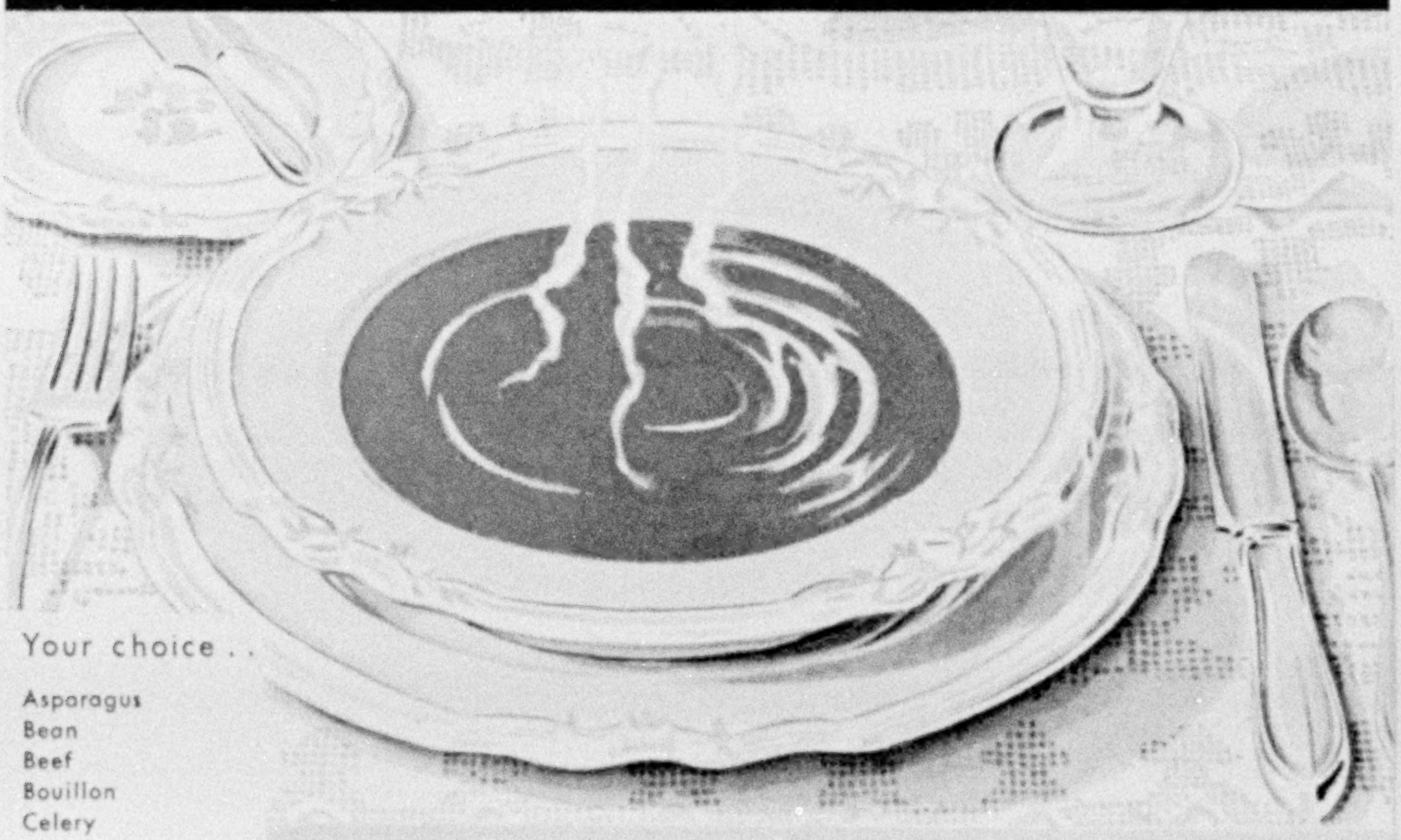
The mail came at last and we cast off. Light broke fast now, as it does in the Tropics. When I had climbed into the plane, the launch skipper passed me my typewriter. Then he started up "The Stars and Stripes" again.

I made out his white launch, bobbing on the sunrise waves of the bay, as we turned overhead. He was waving his scarf at us. Rio is a friendly place.

Notice of change of address of your NATIONAL GEOGRAPHIC MAGAZINE *should be received in the office of the National Geographic Society by the first of the month to affect the following month's issue. For instance, if you desire the address changed for your February number, The Society should be notified of your new address not later than January first.*

IT'S SO TRULY AMERICAN

IN ITS DASH AND COLOR!



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- Bean
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- Bouillon
- Celery
- Chicken
- Chicken-Gumbo
- Clam Chowder
- Consommé
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- Mock Turtle
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- Mutton
- Ox Tail
- Pea
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Geographic readers realize that a nation's character often finds reflection in its popular foods and dishes.

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It is the work of the Bell Telephone System to enable friends, families and business associates to speak clearly and immediately with one another, wherever they may be. Its service is as helpful and accessible on a village street as in the largest cities.

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To this end, its construction program for 1930 has been the largest in its history. This System at all times accepts its responsibility to forward the development and well-being of the nation.

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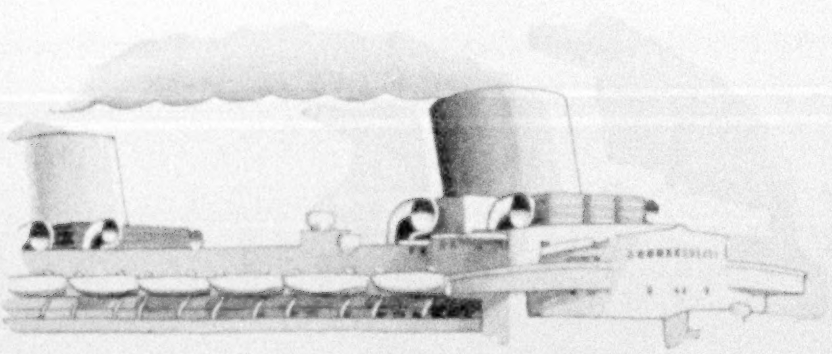

"Sail for Paris immediately"

The export sales counsel for a large automobile concern was suddenly called away on a five-months trip to Europe. He was newly appointed to the position. He had scant time to arrange his affairs.

His personal fortune was tied up in investments that demanded careful supervision. Must he convert his holdings into less variable, and perhaps less profitable, securities? Should he try to follow the market while he was abroad?

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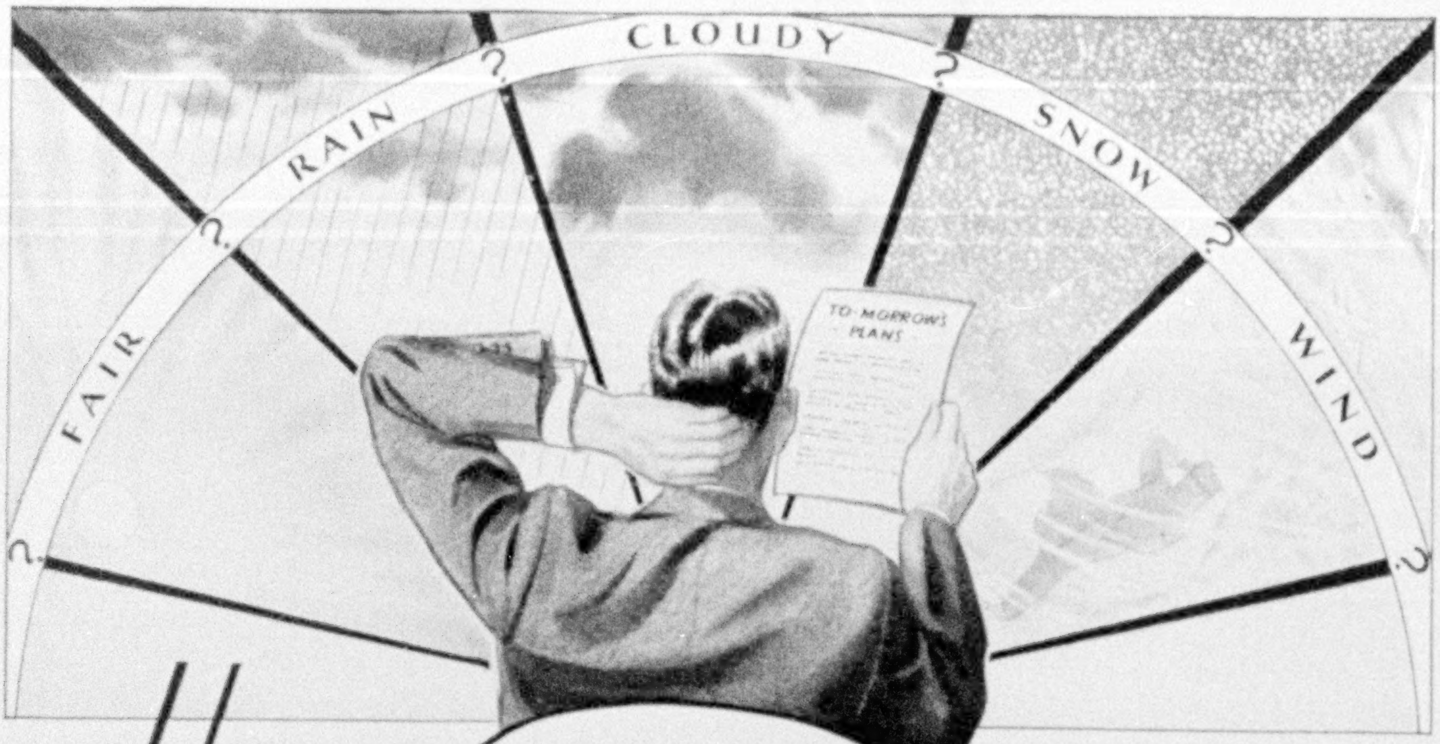
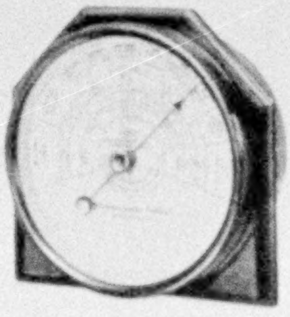
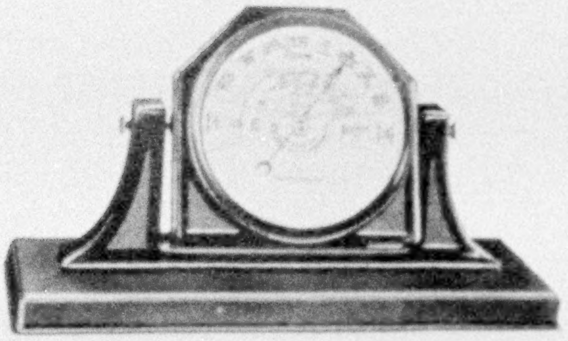


Here's the gift HE NEEDS... *tells to-morrow's weather to-day!*

Taylor Stormoguide Junior, No. 2258

(At right) A sturdy, reliable weather forecaster. Thousands in use allover America. Walnut finished, bakelite case, aneroid movement. 4½ inch white dial. Adjustable for altitude, from sea level to 2,500 feet. Accurate, dependable. $10.





Taylor Stormoguide—Standing Model, No. 2259

Same mechanism as No. 2258 (above). Has handsome gold-toned 4½ inch dial and classical tilting base of Walnut finished bakelite that holds dial at selected position for easy reading. A welcomed gift. $15.

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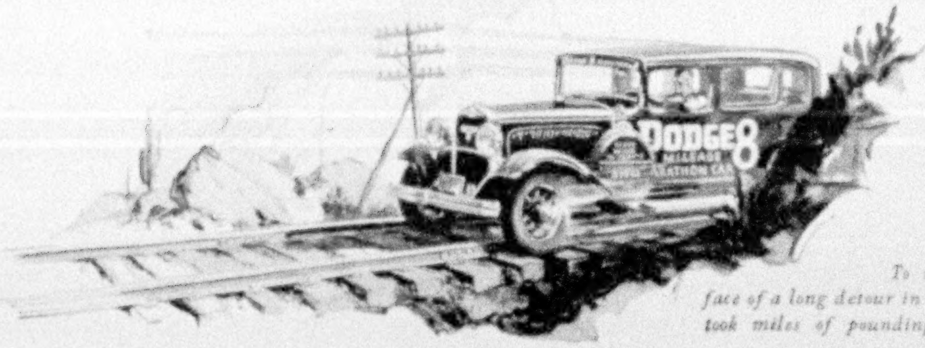

To maintain schedule in the face of a long detour in Utah, the Marathon Eight took miles of pounding over the railroad ties.

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Dodge dependability has become a tradition. All over the world, Dodge owners know it, enjoy it, profit by it . . . hold it so highly that they set Dodge cars on a plane apart from all other motor cars. ▪ ▪ To illustrate that dependability, to bring home to new thousands what Dodge owners already know, a stock Dodge Eight-in-Line sedan is running a Mileage Marathon—greatest dependability exhibition ever attempted. ▪ ▪ In nineteen weeks this car has covered more than 50,000 miles under every condition of road and weather. On and on it goes, day after day—heading for a total mileage that will astonish even those who best know how good a car the Dodge is. ▪ ▪ Your nearest Dodge dealer has a duplicate of the Marathon car to show you. See and drive this dependable Eight or its fine companion car, the dependable Dodge Six.

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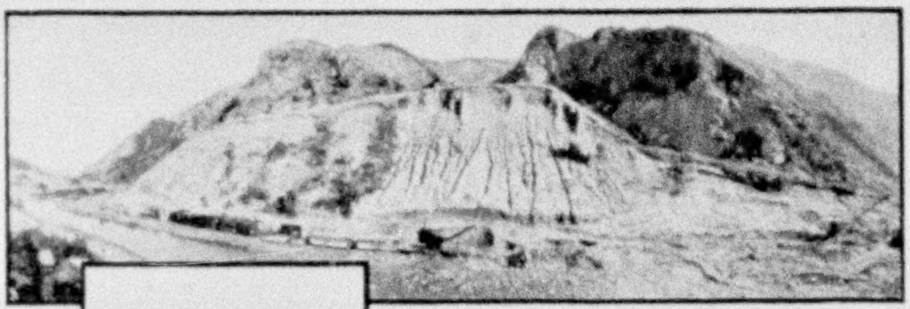

The landslide that made necessary the trip over the railroad ties.

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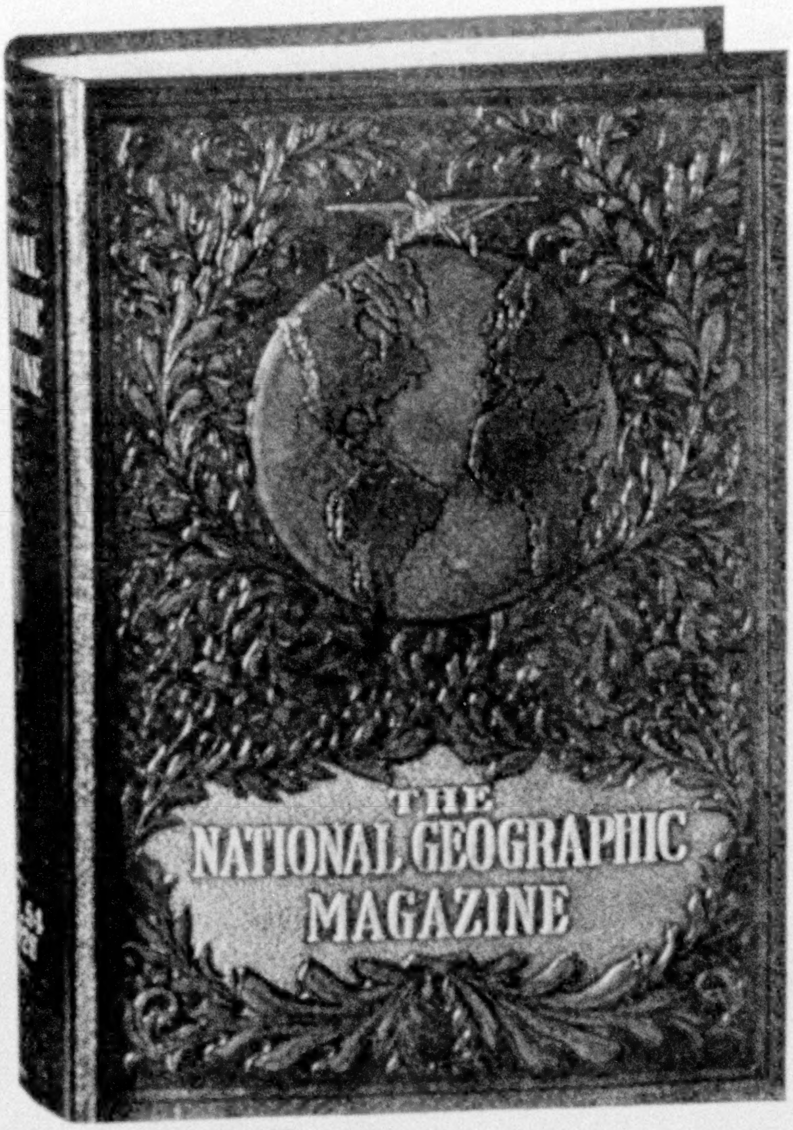

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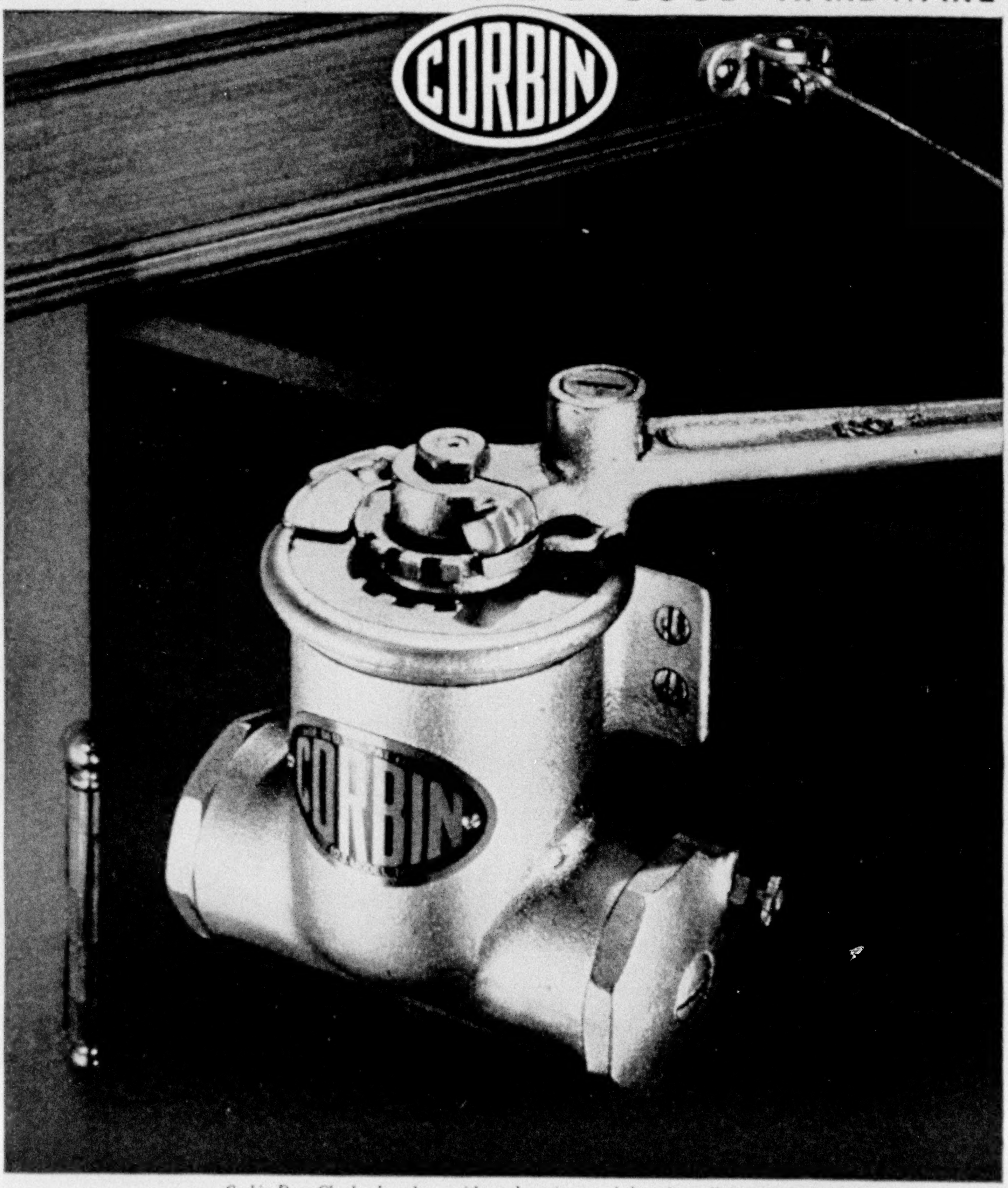

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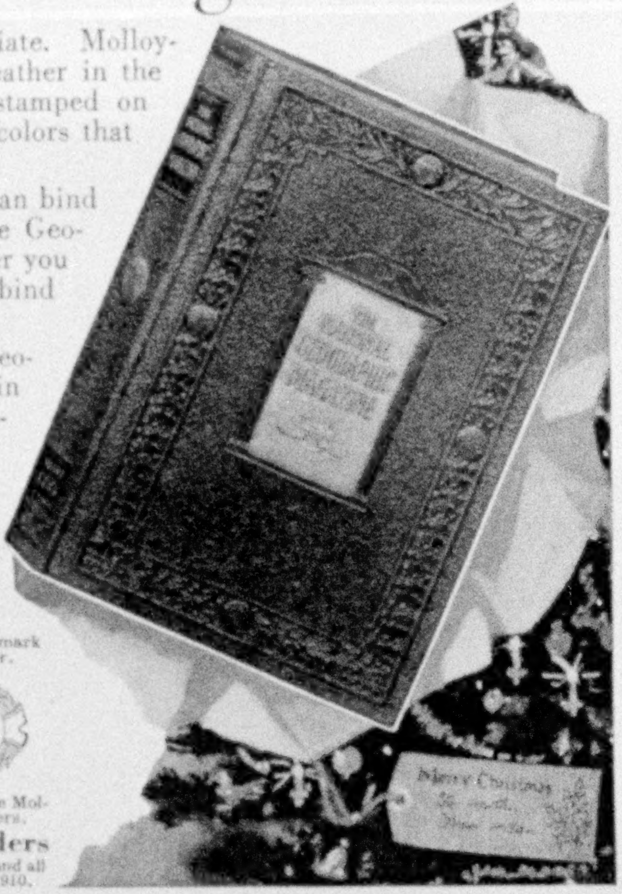

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Christmas in the South Seas! Hawaii's Winter Season beginning now in Autumn, and lingering until the night-blooming Cereus heralds the approach of lovely Summer, centers a brilliant period about the Yuletide holidays... Tonight the Southern Cross shimmers on the horizon...touches with the wand of wonder sophisticates from Europe and America... They have been drawn by oft-told tales of social smartness in the fascinating fringes of the tropics... tales of Christmas Carols pulsing in pure Hawaiian cadence under a velvet, star-lit sky... tales of rare delight in the Land Where Winter is only a Name.

Hawaii in Winter is Glorious With Color. Blue waters are tinged with shades stolen from the skies... Folds of fluffy mists don the crimson glow of sunset... then pile the heavens with mosques of pearl and star-crowned minarets... The dark of great groves of coco-palms marches down to spangled surf and sands silvery in tropic moonlight... There is laughter and the throb of vibrant ukulele... the sigh of the scented sea.

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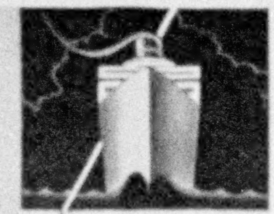

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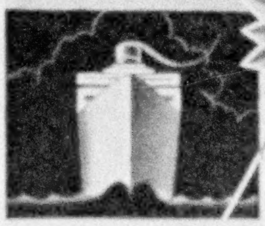

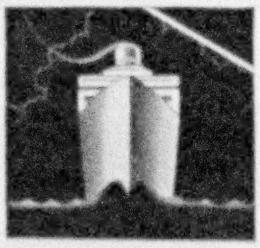

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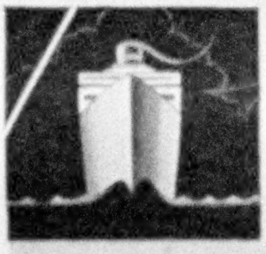

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Most mothers now know that the sun which shines on a winter day—even the clearest and brightest—contains only two per cent of the vital health-maintaining ultra-violet rays found in summer sunlight. Those highly beneficial rays which tan the skin, build up resistance to disease, promote nutrition, stimulate growth; which are essential in building strong bones and sound teeth and which liberate in young bodies that elusive, life-giving vitamin called Vitamin D—

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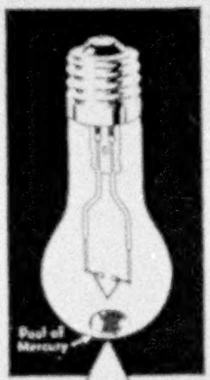
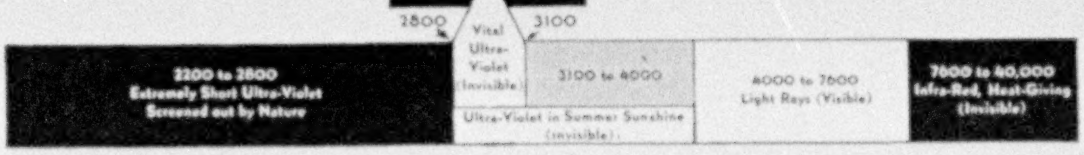
Just as a radio tube can **ONLY** function properly in a set designed for its use, the G. E. Sunlight MAZDA Lamp **MUST** be used in special equipment to obtain ultra-violet radiation.



The G. E. Sunlight MAZDA Lamp is sold in accordance with the requirements of the Council of Physical Therapy of the American Medical Association. For further information and an interesting booklet write The Incandescent Lamp Department of General Electric Company, Nela Park, Cleveland, Ohio.



Sunlight, as the chart above indicates, is composed of electro-magnetic waves of varying lengths which science has classified as infra-red waves, visible light waves, and invisible ultra-violet. Recent scientific investigations, however, tend to show that one particular band in the ultra-violet range is of special importance in the maintenance of general health. This lies between 2800 and 3100 Angstrom units. It is within this desirable ultra-violet zone that the G. E. Sunlight MAZDA *Lamp concentrates its ultra-violet effectiveness.*

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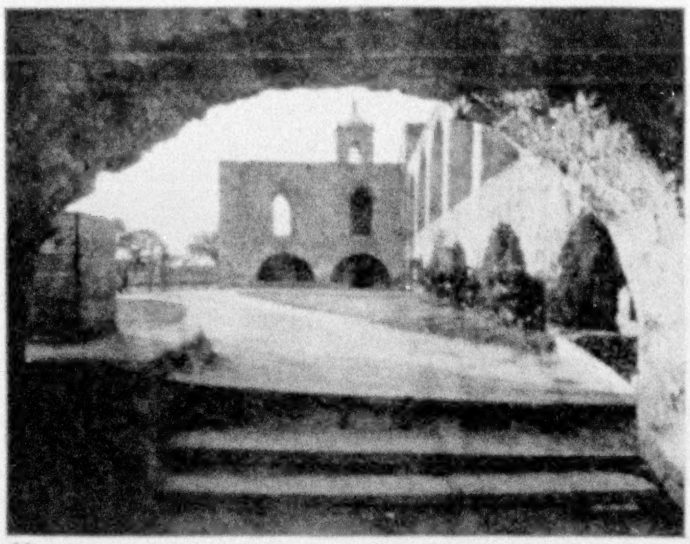

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No wonder they call it the "most interesting Southern city"—this cosmopolitan capital of the empire of South and West Texas and gateway to Mexico. For, against San Antonio's historic background, the golfer's shout of "fore" from velvet-smooth fairways, the crack of mallets on balls in exciting polo matches, the shouts of children at play, the drone of army planes high overhead—all reveal a modern community, whose hospitable people leave nothing undone to make each day a joyous adventure in living.

Forget dull care in San Antonio *this* winter.

San Antonio

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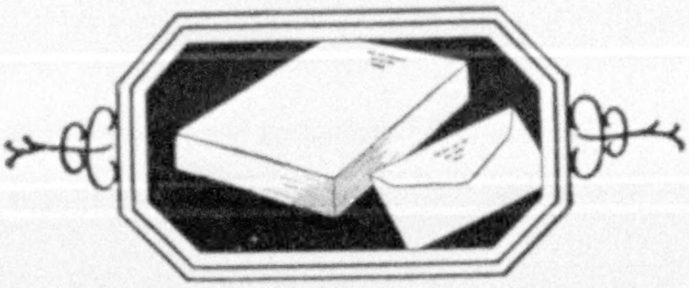

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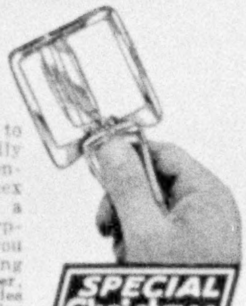
KEENEX SHARPENER



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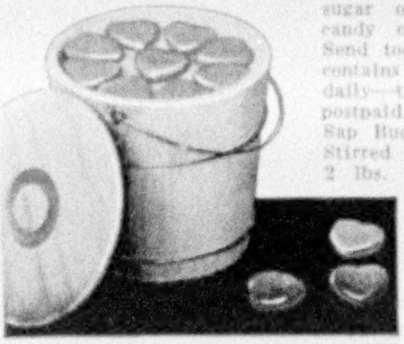

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Maple Grove Candies, Inc.
Route 17
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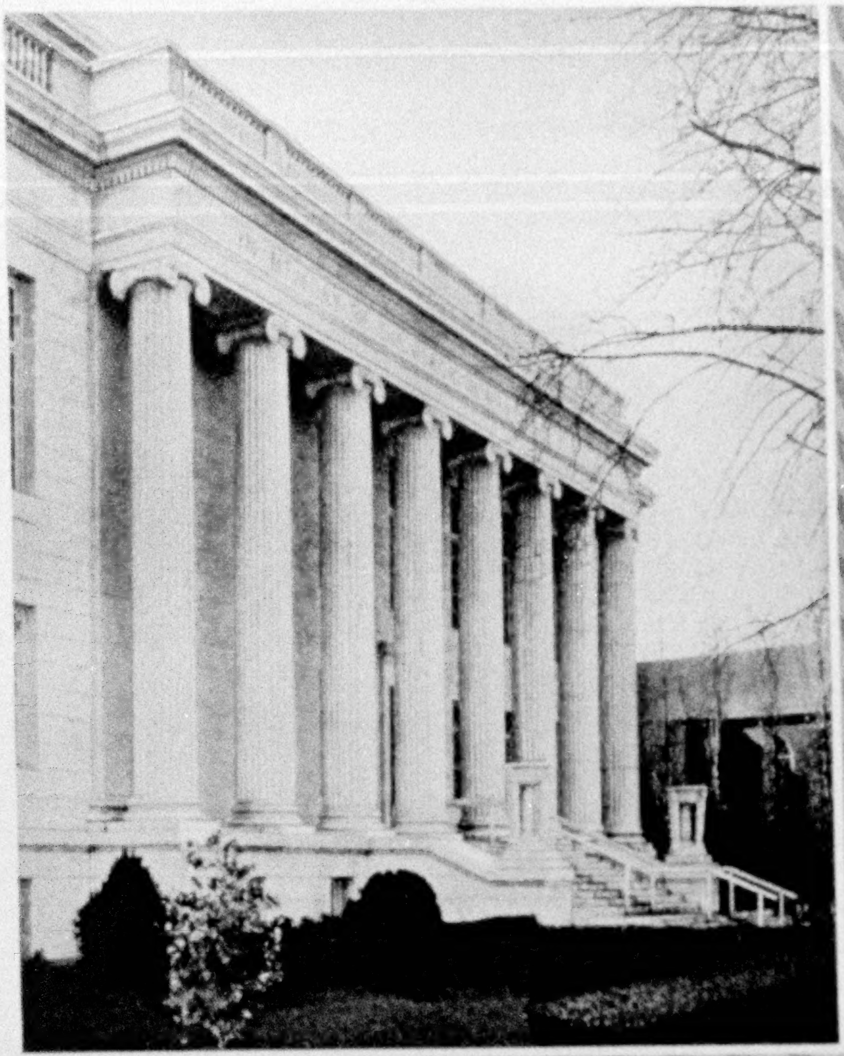

All that is beautiful shall abide forever

CHOSEN because of its beauty and permanence, Vermont Marble gives the new Red Cross Memorial Building in Washington the dignity and serenity of all things ageless and everlasting. The façade of this impressive memorial to the heroic American women who served the nation in the World War is illustrated above. As in public monuments, Vermont Marble is being increasingly used for private family mausoleums, as shown at the right. Vermont Marble is *the nation's memory stone.*

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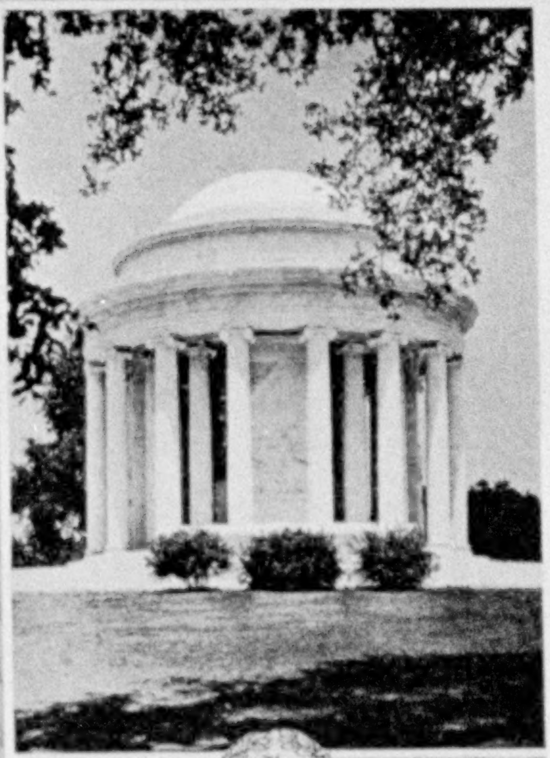

The Memory Stone

VERMONT MARBLE

Write for the free booklet, "All That is Beautiful Shall Abide Forever." It gives helpful information, and simplifies the problem of selecting memorial designs for your special requirements. Address: Dept. N-304, Vermont Marble Company (world's largest quarriers of marble), *Proctor, Vermont.*

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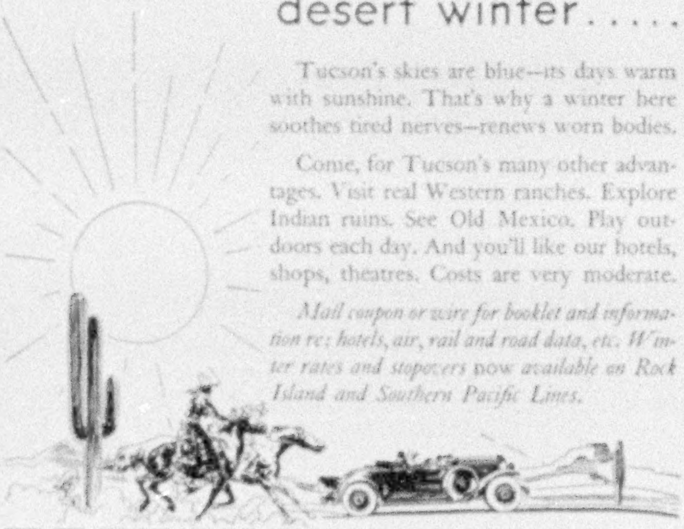
Tucson's skies are blue—its days warm with sunshine. That's why a winter here soothes tired nerves—renews worn bodies.

Come, for Tucson's many other advantages. Visit real Western ranches. Explore Indian ruins. See Old Mexico. Play outdoors each day. And you'll like our hotels, shops, theatres. Costs are very moderate.

Mail coupon or wire for booklet and information re: hotels, air, rail and road data, etc. Winter rates and stopovers now available on Rock Island and Southern Pacific Lines.



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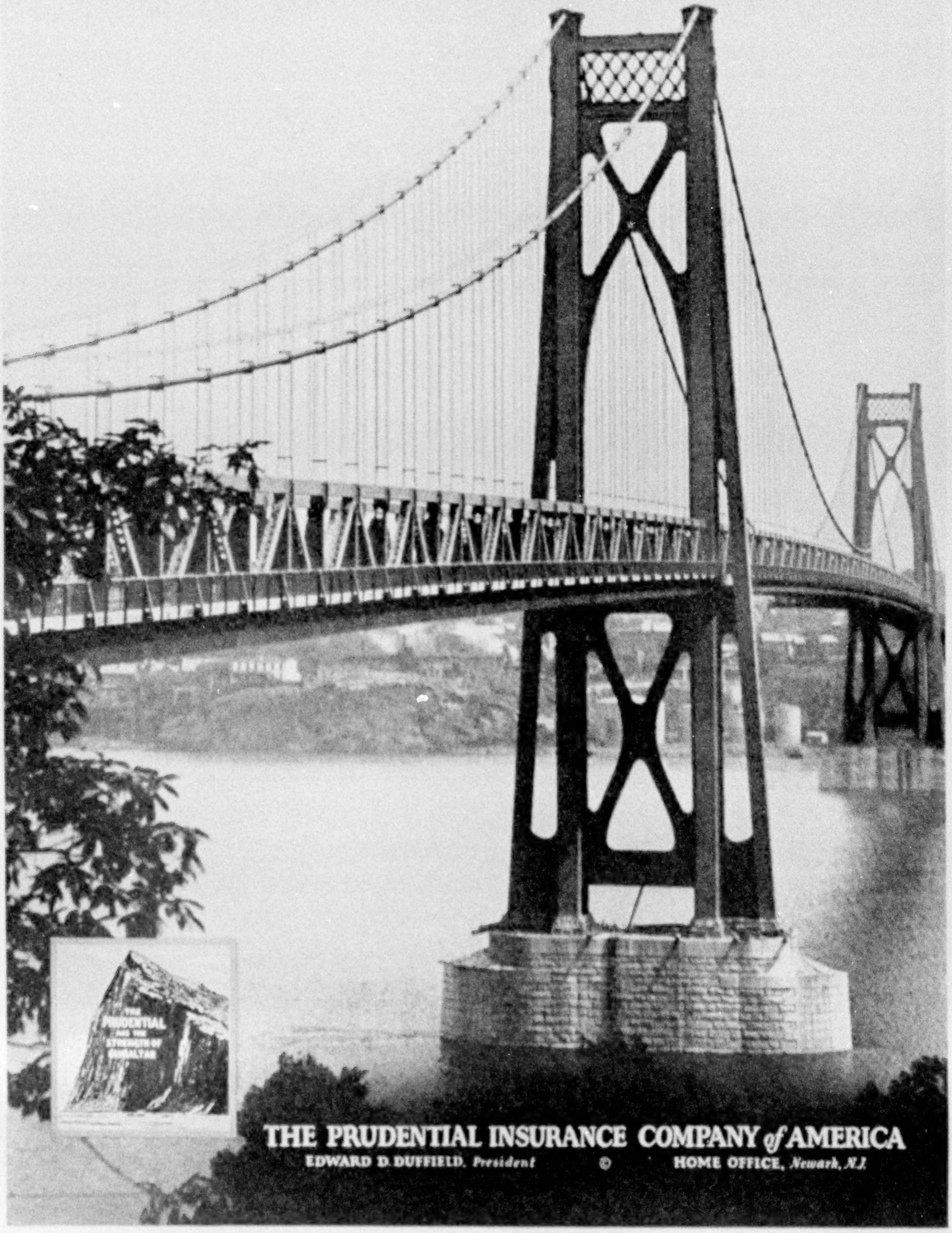

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YOU, too, can enjoy that real country flavor so keenly relished by past generations, now available (by mail only), in Ziemer's OLD TYME Summer Sausage, Salami Sausage, Bacon and Ham.

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A RADIO FEATURE

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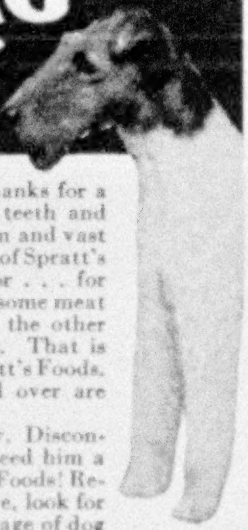
HIS TAIL WILL WIG-WAG "THANKS"



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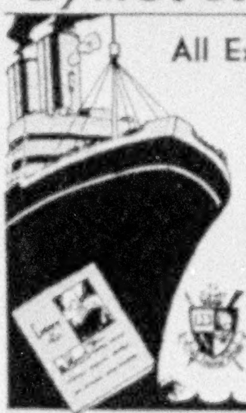

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USE **Moore Push-Pins,** 2 sizes, or Moore Decorative Push-Pins, 6 colors, 4 sizes, to hang up greens, wreaths, and all light-weight wall decorations. For heavy articles, use Moore Push-less Hangers, 4 sizes.

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Next winter . . .

"Ease up"

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● Next winter Bedouin sheiks crowd Algerian cafes . . . pilgrims muse in Gethsemane. For little more than $12 a day, you can board the Empress of France, yacht-like giantess, next Feb. 3, at New York. Hers is the cruise with a "5th Ace" . . . Canadian Pacific's one management, ship and shore. For 73 days, nothing to do but enjoy! As low as $900. Booklets, ship plans, from your own agent or Canadian Pacific offices in 35 cities in U. S. and Canada.

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Kellogg's Corn Flakes are ideal. Wholesome, easy to digest—a wonderful vehicle for healthful milk. Add canned fruits for variety or sweeten with honey. Order the red-and-green package from your grocer. Made by Kellogg in Battle Creek.

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Corn Flakes, Rice Krispies, ALL-BRAN, PEP *Bran Flakes, Kellogg's Shredded Whole Wheat Biscuit, Wheat Krumbles, Kaffee Hag Coffee—the coffee that lets you sleep.*

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Remember your friends with this new and unique maple confection—direct from the heart of Vermont's maple woods. Delicious, smooth Maple Penuchi, rich with fresh chopped butternuts—a real taste treat. One lb. net, packed in neatly made natural-wood "book" box with deluxe art container. With its popular gift title, *"The Sweetest Story Ever Told,"* a most acceptable Christmas remembrance. We mail direct to your list, $1.25 per "book" delivered, wherever parcel post reaches. Write addresses plainly.

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Dept. D, Stowe, Vermont
Largest direct-to-consumer shippers of maple products. Send for price list.

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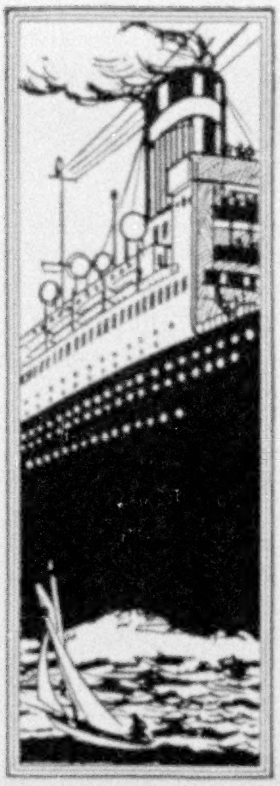
12-day all-expense cruises $125 and up — S. S. Munargo fortnightly from New York. The ship your hotel. 2 days in Nassau — 2½ days in Havana with two sightseeing trips — 2 days in Miami.



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BERMUDA A fast and comfortable service via Munson steamers. Broad deck spaces, airy, outside rooms. **Round trip $70 and up.** All expense tours arranged. Fortnightly sailings — S. S. Pan America. First sailing Dec. 19th, and weekly thereafter.

WINDWARD ISLANDS To strange, colorful ports in Beautiful Tropic Isles. **25 days, 5300 miles, $200. 15 ports. Sailings fortnightly. S. S. Western Ocean or S. S. Munamar** ... deck games, gay social times, no passports needed. **BARBADOS stopover with 8 days at Marine Hotel, Bridgetown; inclusive rates for cruise, $195 up.**

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Occupation ....
(This information is important for the records.)

Address ....

.... *for membership in the Society.*

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12-30

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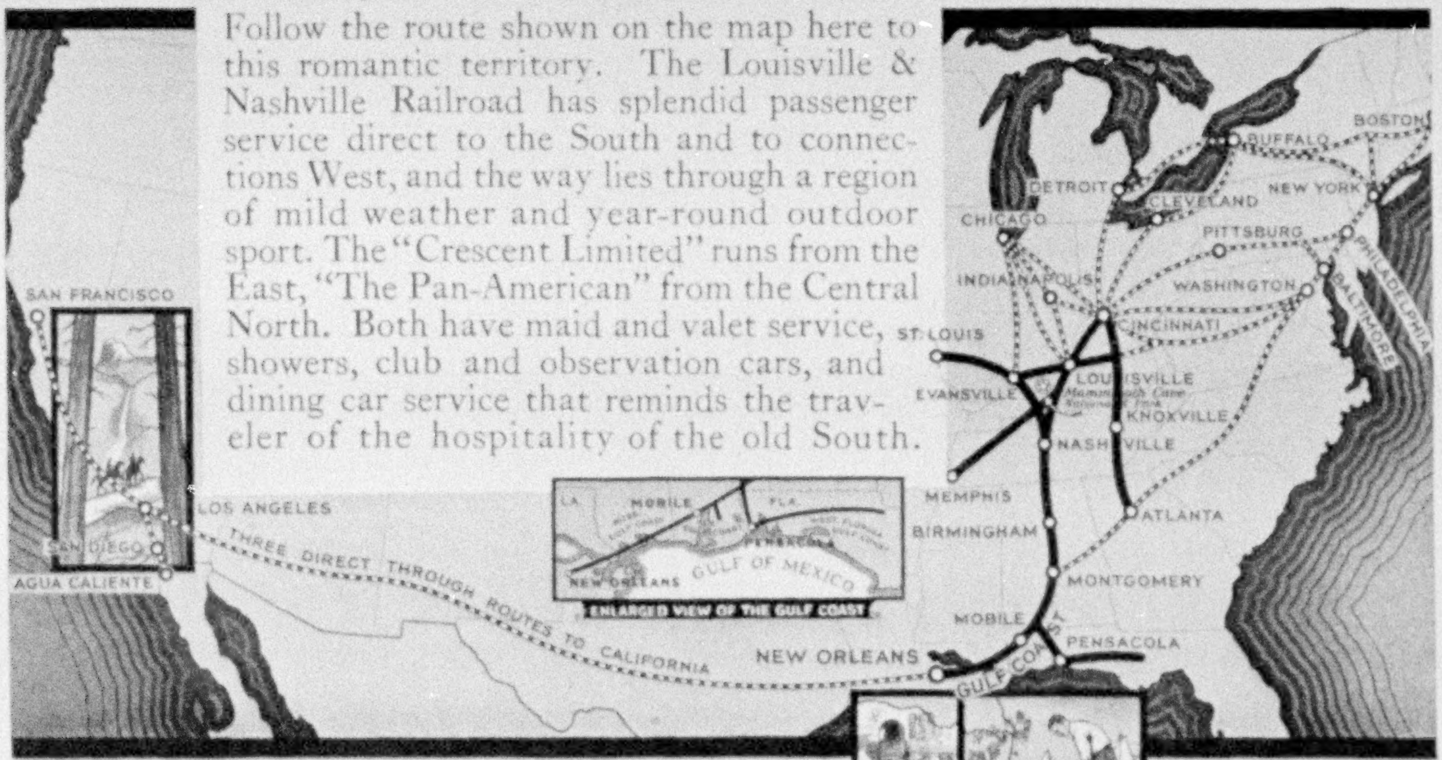
Name and Address of Nominating Member

To the South lie lands of romantic history . . . . the **GULF COAST, NEW ORLEANS** *. . . . on the ideal winter route to* **CALIFORNIA. . . .**

High-bred cavaliers, gallant soldiers, thoughtful monks, bloodthirsty filibusters, and hardy pioneers came to the southern territory, seeking lands and gold. For almost three hundred years the battle waged between brother nations and against Indian tribes, and not until the American flag was raised over the South and Southwest was peace restored.

Every bit of this territory is redolent of history. Streets, parks, and lakes bear the names of warriors and ministers of powerful European empires. The sight of a vine-covered stone building, and Davy Crockett lives again. The campanile of a Spanish mission, a granite monument set under moss-covered oaks, a narrow alley overhung by balconies beautiful with lacy iron work, a famous restaurant where famous men have wined and dined—and the pages of history begin to unfold.

Follow the route shown on the map here to this romantic territory. The Louisville & Nashville Railroad has splendid passenger service direct to the South and to connections West, and the way lies through a region of mild weather and year-round outdoor sport. The "Crescent Limited" runs from the East, "The Pan-American" from the Central North. Both have maid and valet service, showers, club and observation cars, and dining car service that reminds the traveler of the hospitality of the old South.



Write W. I. Lightfoot, General Passenger Agent, Louisville & Nashville Railroad Company, Room 453A, 9th and Broadway, Louisville, Ky., for information about trains to take, stopover privileges on the Gulf Coast and at New Orleans, and literature about sights to see and things to do in this romantic territory.

LOUISVILLE & NASHVILLE RAILROAD

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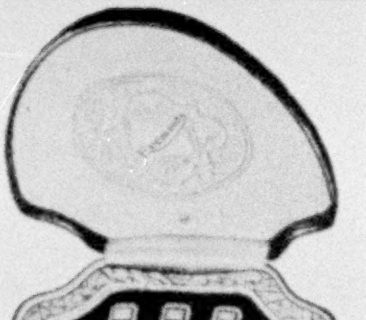
No gift compliments a man's taste and "style" more than Krementz Jewelry. This is true the year round, but it's particularly true at Christmas time—for there's something intimate and personal about fine jewelry which makes it thrilling to give, and thrilling to receive. ~ Krementz Jewelry is the kind men buy for *themselves!* It is handsome, mannish, smart, correct. ~ That's why every man who is lucky enough to receive a Krementz Full Dress or Tuxedo Set as a gift can be sure that it is faultlessly fashioned and absolutely correct. Krementz Jewelry is *internationally* styled. It has to be, because it is worn the world over. ~ The better stores everywhere carry Krementz Dress, Business and Sports Jewelry. May we send you our handsomely illustrated booklet which contains a Dress Chart, showing *what is correct to wear for each and every occasion?* ~ KREMENTZ & CO., Newark, N.J. *Makers of Fine Jewelry since 1866.* ~ New York Office: 286 Fifth Avenue—LACkawanna 3123.



Krementz Full Dress Sets and Krementz Tuxedo Sets in attractive Gift Cases—from $7.50 to $35.00.

KREMENTZ
"Self-Adjustable"
Watch Band

By means of a "Grab Fast Hook" it can be snugly snapped to any link of the band. That is why and how it is *self-adjustable* to any size wrist. Various style links to select from. Prices from $7.50 to $20.

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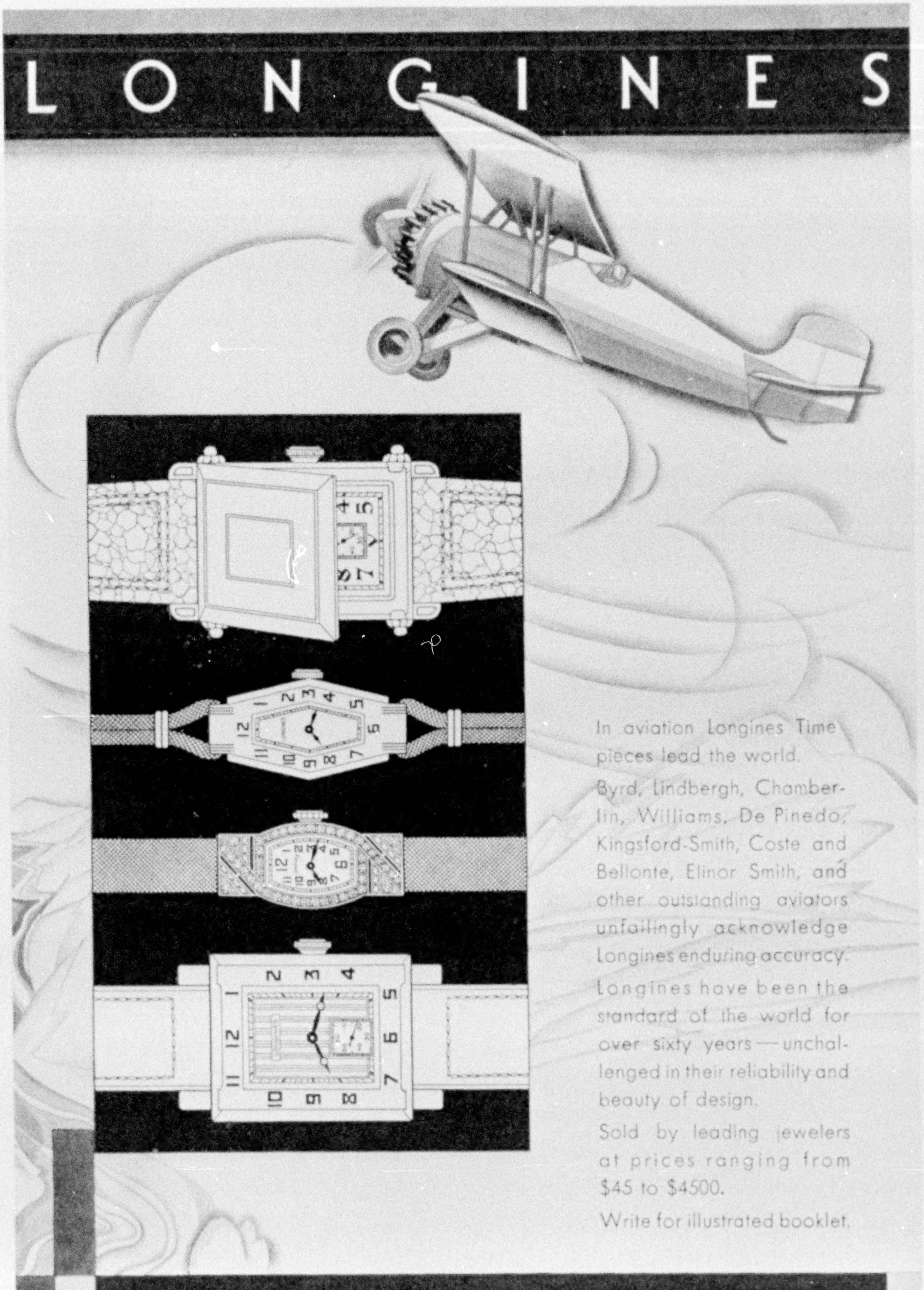

PRESS OF JUDD & DETWEILER, INC.
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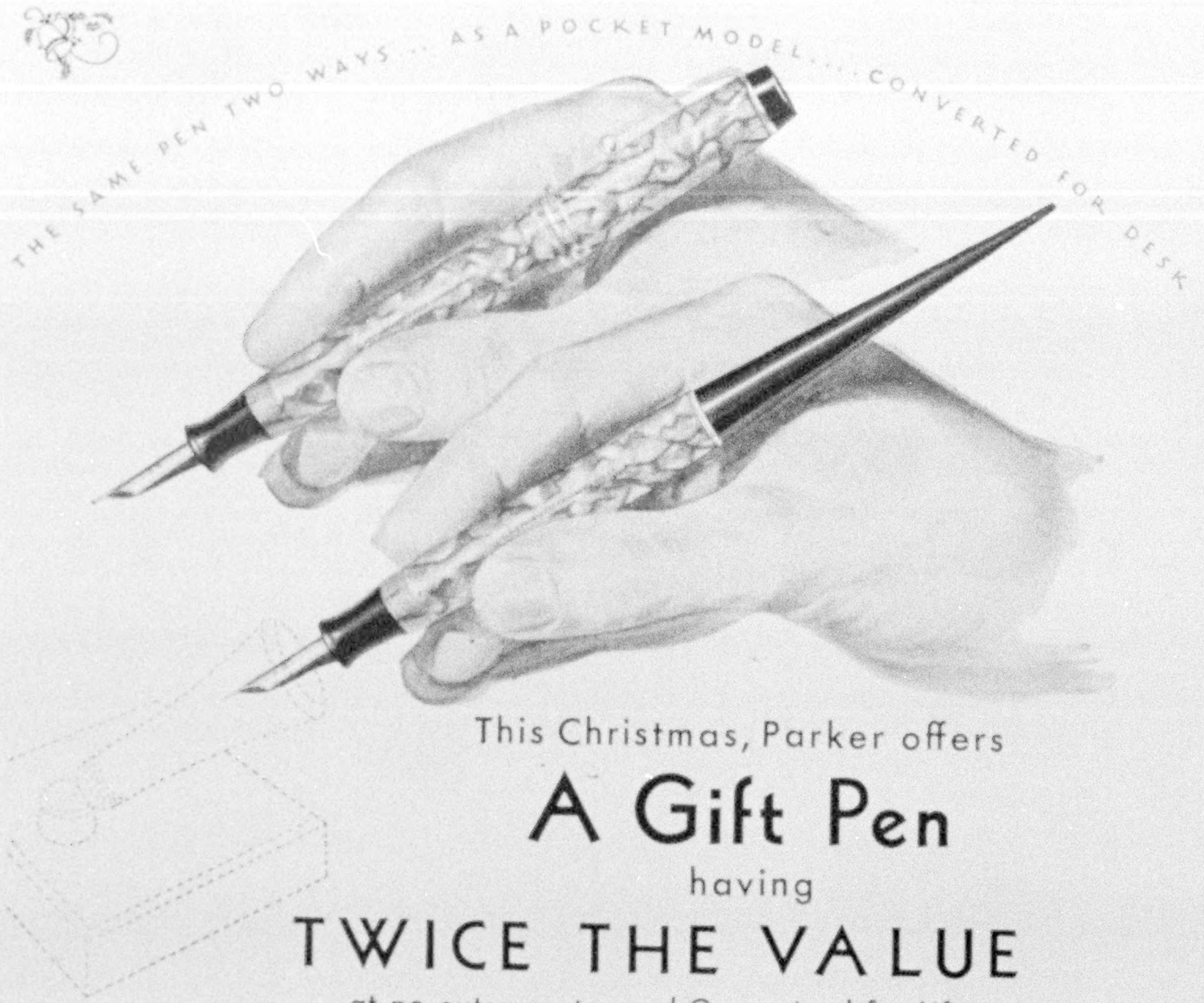

This Christmas, Parker offers

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TWICE THE VALUE

at no extra cost—*and Guaranteed for Life*

Actually—the new Parker convertible Duofold is twice as useful as the usual fountain pen. For those to whom you give this streamlined beauty can change it back and forth at will from a Pocket model to a Desk Set Pen. You virtually give them two Pens in one.

Saves the Price of a Second Pen

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So in choosing Christmas Pens insist on the Parker. Parker Pen owners are the only ones who can have a handsome Desk Pen Set without buying a special pen.

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Be sure to look for this famous imprint on the Pen—"Geo. S. Parker—DUOFOLD." This means it holds 17.4% more ink than average, writes with Pressureless Touch, and is *Guaranteed for Life!* All dealers now demonstrating.

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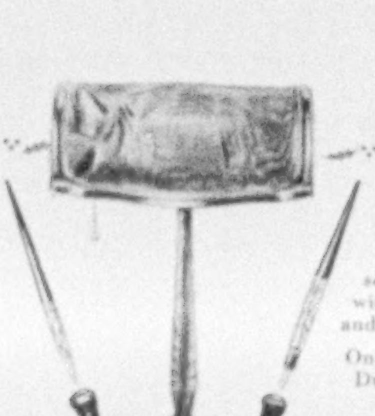
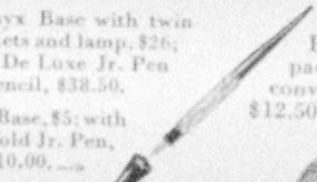
PEN GUARANTEED FOR LIFE $5 $7 $10

Other Parker Pens, $2.75 and $3.50

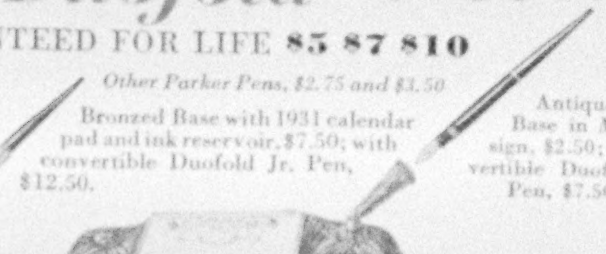
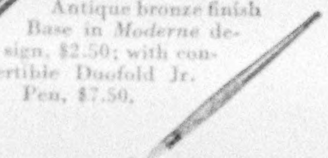


Onyx Base with twin sockets and lamp, $26; with De Luxe Jr. Pen and Pencil, $38.50.

Onyx Base, $5; with Duofold Jr. Pen, $10.00.



Bronzed Base with 1931 calendar pad and ink reservoir, $7.50; with convertible Duofold Jr. Pen, $12.50.



Antique bronze finish Base in *Moderne* design, $2.50; with convertible Duofold Jr. Pen, $7.50.